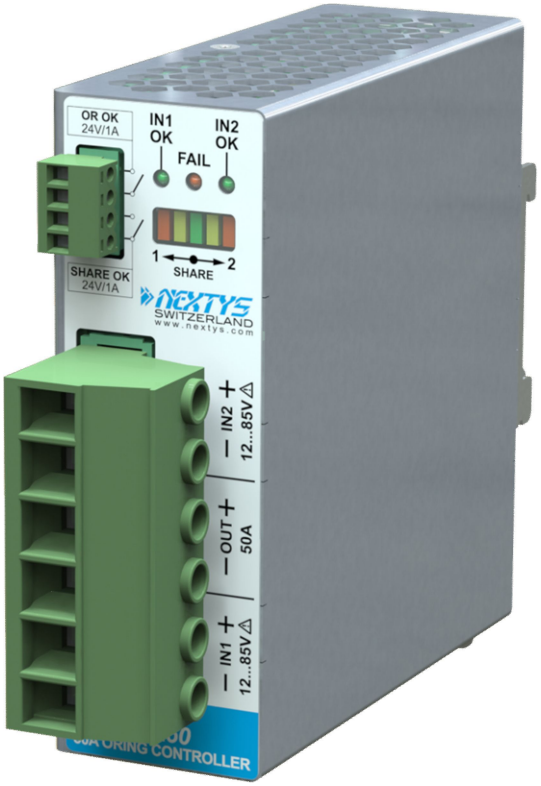
OR50 Oring Controller

Oring Controller 50A 12V-85V Very Low Loss



OR50 is a modern, CPU controlled device and responds to a wide range of applications where strong redundancy of DC power supplies is needed.
By keeping the 2 power supplies (PS) "hot" (each operating at half of the load need) the system reaches higher MTBF than by using one PS "hot" and the other "cold" (as per standard ORing devices). It allows same life expectancy for the electrolytic capacitors and other sensitive parts of both PS and it prevents an excessive ageing of the unit that should be kept "hot".
OR50 allows the paralleling of the output of any 2 identical PS with any current up to 50A and voltages from 12V to 85V. The isolation between the units is achieved through power MOSFETs with advanced control circuitry.
Several **OR50** can be interconnected in order to achieve redundancy for > 2 PS systems**.**
OR50 allows perfect current distribution between 2 PS, in case of their use for shared power**.**
OR50 provides perfect isolation between 2 PS in case of 1 unit failure and also the continuous delivery of energy towards a critical load. It is specially designed for high MTBF and compliance to a wide choice of PS and loads.

■ *Main Features*

- Wide input voltage range: 12…85Vdc
- Extremely low loss - up to 99% efficiency
- Ultra compact
- CPU controlled
- Output 50A
- Pluggable connectors
- Easy acknowledgment of the power supplies availability
- Current share status display eases sources balancing
- Up to 75°C operating temperature with no derating

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TECHNICAL DATA

Model type	OR50	
OUTPUT DATA		
Rated voltage	12…85Vdc (UL certified)	
Continuous current	50A	
Peak output current	> 300A	
Conduction resistence	< 4mΩ	
INPUT DATA		
Input DC rated voltage	12…85Vdc (UL certified)	
Input DC rated current	50A	
Standby power	< 1.5W	
Input protections	▪ Overvoltage ≥ 100Vdc ▪ Reverse polarity connection	
USER INTERFACE		
Status Signals	▪ **IN1 OK** - green LED ▪ **IN2 OK** - green LED ▪ **FAIL** - red LED (redundancy fail) ▪ **SHARE** - bargraph current share ▪ **OR OK** - dry contact (NO, 24Vdc / 1A) ▪ **SHARE OK** - dry contact (NO, 24Vdc / 1A)	
GENERAL DATA		
Dissipated power	< 10W	
Operating temperature[1]	- 40°C…+ 75°C UL certified up to 75°C	
Derating	No derating	
Storage temperature	- 40°C…+ 80°C	
Humidity	5…95% r.H. non condensing	
Cooling	Natural convection	
Life time expectation	291'894h (33.3 years) at 25°C ambient full load	
Overvoltage category Pollution degree	▪ EN50178 ▪ IEC60664-1	I 2
Insulation enclosure to live parts	0.75kVdc	
Safety Standards	▪ UL508 ▪ EN60950 ▪ EN50178	(certified E356563) (reference) (reference)
EMC Emission	▪ EN55011 (CISPR11) ▪ EN55022 (CISPR22)	Class A Class A
EMC Immunity	▪ EN61000-4-2 ▪ EN61000-4-3 ▪ EN61000-4-4 ▪ EN61000-4-5 ▪ EN61000-4-11	Level 3 Level 3 Level 3 Level 1 Level 2
Protection degree	▪ EN60529	IP20
Vibration sinuosoidal	▪ IEC 60068-2-6	(5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)
Shock	▪ IEC 60068-2-27	(30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)
Connection terminals Input/Output	Up to 16mm², screw type pluggable (20...6AWG)	
Connection terminals signals	1.5mm², screw type pluggable (24...16AWG)	
Case material	Aluminum	
Weight	0.35kg	
Size (W x H x D)	40.0 x 115.0 x 110.0mm	

1) Start-up type tested: - 40°C, possible at nominal voltage with load deration.

Notes:
- Technical parameters are typical, measured in laboratory environment at 25°C and 24Vdc, at nominal values, after minimum 5 minutes of operation.
- Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.
- Data may change without prior notice in order to improve the product.

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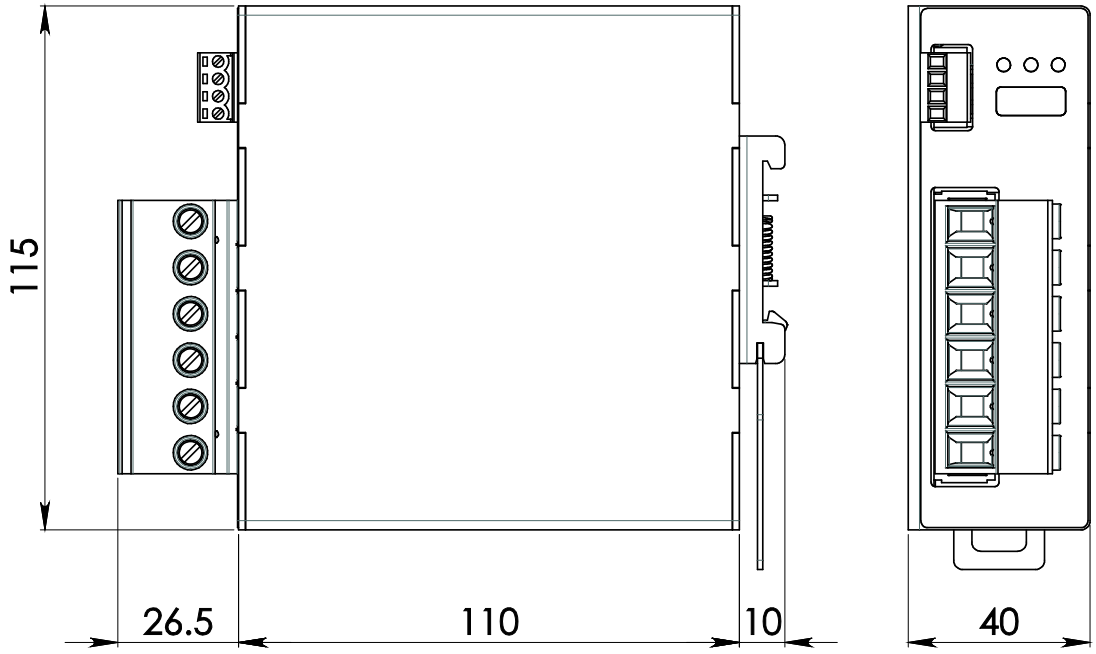
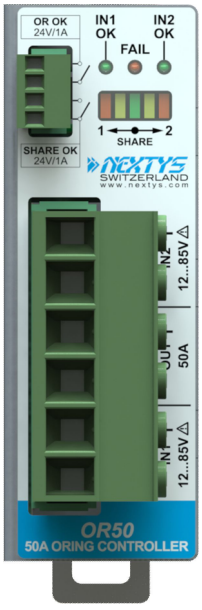
DIMENSIONS



CONNECTION



Input Connection:

- IN1 + = Positive DC (Power Supply)
- IN1 - = Negative DC (Power Supply)
- IN2 + = Positive DC (Power Supply)
- IN2 - = Negative DC (Power Supply)

Output Connection:

- OUT + = Positive DC (Load)
- OUT - = Negative DC (Load)

Signalling:

OR OK: dry contact

- NO
- COM

SHARE OK: dry contact

- NO
- COM