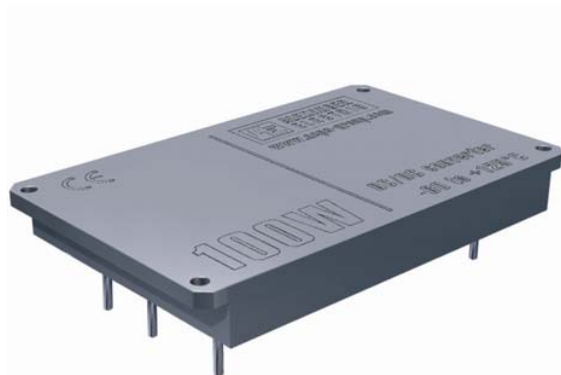


New isolated DC/DC modules for industrial, communications, data processing and defence electronics. At the small case size (73 x 53 x 13 mm) maximal output power of new modules at some cases could reach 120W. With this, modules could work at wide temperature range (-60...+125°C). Depending on a model they one or two isolated output channels, could be turned on/off at command, have full range of protection from over voltage, short circuit, over heating, could be connected parallel and serial at outputs. They are issued in two types of the cases, covered with nickel and maintaining solder.



Features

- 2 year warranty
- Power density up to 2400 W/dm³
- Operating temperature range from -60°C to +125°C
- High reliability
- Short circuit , over voltage and thermal protection
- Remote on/off
- Efficiency 82% for U_{out}=5 VDC
88% for U_{out}=24 VDC
- Output voltage adjustment
- Maximum capacity 9000 µF for U_{out}=5 VDC

Series structure

MR100-UM и **MR80-UM** designed for industry and military class equipment. They are made on electronic components, tested in an expanded temperature range. Working at the temperature range of -60...+85°C, have thermal protection microcircuit. They are issued in the reinforced case with flanges. These modules are going through special temperature tests and electric thermal training.

MR100-UT, MR80-UT designed for military class equipment. They are made on a specially designed electronic components. They have expanded temperature range -60...+125°C, have microcircuit of thermal protection on +118...125°C. They are issued in the reinforced case with flanges. Modules are run through special kinds of thermal and capacity tests including electric thermal training with extreme on/off mode.

Ordering information

MR 100 D- 24 S 12 - U T

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① - Mistral Series
- ② - Maximal output power, W
(limiting power is designated on the case for the given standard size, stipulated at the order)
- ③ - Voltage transformation class
D - DC/DC
- ④ - Nominal input voltage
12 VDC (10,5...18 VDC)
12W VDC (10,5...36 VDC)
24 VDC (18...36 VDC)
24W VDC (18...75 VDC)
27 VDC (17...36 VDC)
48 VDC (36...75 VDC)
- ⑤ - Output channels quantity
S - one
- ⑥ - Output voltage, VDC (two sign for channel)
- ⑦ - Design
U - reinforced aluminium case with flanges
- ⑧ - Operating temperature range
M -60°C...+85°C
T -60°C...+125°C

Standard single output models

Module	Input voltage range	Output Power	Output voltage / nominal output current	Max. output current on agreement with producer
MR100D-12S05-XX	10,5...18 VDC	100 W	5 VDC / 20 A	20 A
MR100D-12S12-XX			12 VDC / 8,33 A	10 A
MR100D-12S15-XX			15 VDC / 6,67 A	8 A
MR100D-12S24-XX			24 VDC / 4,17 A	5 A
MR100D-12S27-XX			27 VDC / 3,70 A	4,44 A
MR100D-12S48-XX			48 VDC / 2,08 A	2,5 A
MR100D-24S05-XX	18...36(40) VDC		5 VDC / 20 A	20 A
MR100D-24S12-XX			12 VDC / 8,33 A	10 A
MR100D-24S15-XX			15 VDC / 6,67 A	8 A
MR100D-24S24-XX			24 VDC / 4,17 A	5 A
MR100D-24S27-XX			27 VDC / 3,70 A	4,44 A
MR100D-24S48-XX			48 VDC / 2,08 A	2,5 A
MR100D-27S05-XX	17...36(80) VDC		5 VDC / 20 A	20 A
MR100D-27S12-XX			12 VDC / 8,33 A	10 A
MR100D-27S15-XX			15 VDC / 6,67 A	8 A
MR100D-27S24-XX			24 VDC / 4,17 A	5 A
MR100D-27S27-XX			27 VDC / 3,70 A	4,44 A
MR100D-27S48-XX			48 VDC / 2,08 A	2,5 A
MR100D-48S05-XX	36...75 VDC		5 VDC / 20 A	20 A
MR100D-48S12-XX			12 VDC / 8,33 A	10 A
MR100D-48S15-XX			15 VDC / 6,67 A	8 A
MR100D-48S24-XX			24 VDC / 4,17 A	5 A
MR100D-48S27-XX			27 VDC / 3,70 A	4,44 A
MR100D-48S48-XX			48 VDC / 2,08 A	2,5 A
MR80D-12S05-XX	10,5...18 VDC	80 W	5 VDC / 16 A	20 A
MR80D-12S12-XX			12 VDC / 6,67 A	10 A
MR80D-12S15-XX			15 VDC / 5,33 A	8 A
MR80D-12S24-XX			24 VDC / 3,33 A	5 A
MR80D-12S27-XX			27 VDC / 2,96 A	4,44 A
MR80D-12S48-XX			48 VDC / 1,67 A	2,5 A
MR80D-12WS12-XX	10,5...36 VDC		12 VDC / 6,67 A	10 A
MR80D-12WS15-XX			15 VDC / 5,33 A	8 A
MR80D-12WS24-XX			24 VDC / 3,33 A	5 A
MR80D-12WS27-XX			27 VDC / 2,96 A	4,44 A
MR80D-12WS48-XX			48 VDC / 1,67 A	2,5 A
MR80D-24S05-XX			18...36(40) VDC	5 VDC / 16 A
MR80D-24S12-XX	12 VDC / 6,67 A			10 A
MR80D-24S15-XX	15 VDC / 5,33 A			8 A
MR80D-24S24-XX	24 VDC / 3,33 A			5 A
MR80D-24S27-XX	27 VDC / 2,96 A			4,44 A
MR80D-24S48-XX	48 VDC / 1,67 A			2,5 A
MR80D-24WS12-XX	18...75 VDC		12 VDC / 6,67 A	10 A
MR80D-24WS15-XX			15 VDC / 5,33 A	8 A
MR80D-24WS24-XX			24 VDC / 3,33 A	5 A
MR80D-24WS27-XX			27 VDC / 2,96 A	4,44 A
MR80D-24WS48-XX			48 VDC / 1,67 A	2,5 A
MR80D-27S05-XX			17...36(80) VDC	5 VDC / 16 A
MR80D-27S12-XX	12 VDC / 6,67 A			10 A
MR80D-27S15-XX	15 VDC / 5,33 A	8 A		
MR80D-27S24-XX	24 VDC / 3,33 A	5 A		
MR80D-27S27-XX	27 VDC / 2,96 A	4,44 A		
MR80D-27S48-XX	48 VDC / 1,67 A	2,5 A		
MR80D-48S05-XX	36...75 VDC	5 VDC / 16 A	20 A	
MR80D-48S12-XX		12 VDC / 6,67 A	10 A	
MR80D-48S15-XX		15 VDC / 5,33 A	8 A	
MR80D-48S24-XX		24 VDC / 3,33 A	5 A	
MR80D-48S27-XX		27 VDC / 2,96 A	4,44 A	
MR80D-48S48-XX		48 VDC / 1,67 A	2,5 A	

* Modules with non-standard output voltage from 3 to 80 VDC with maximal output current up to 20 A, could be delivered by request.

Specifications of DC/DC converters MR100, MR80 series

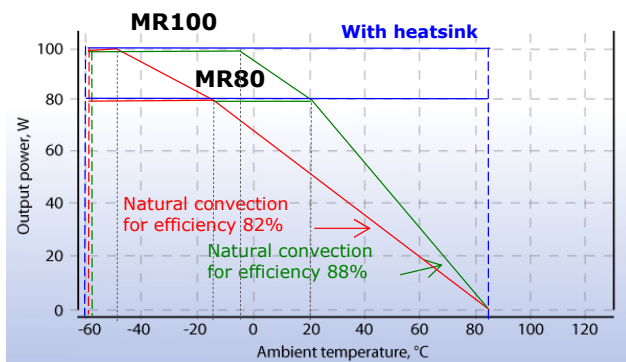
Input specifications		
Input voltage range / transitional deviation, 1 sec		
12 VDC	10,5...18 VDC / 10,5...18 VDC	
12W VDC	10,5...36 VDC / 10,5...40 VDC	
24 VDC	18...36 VDC / 18...37,8 VDC	
24W VDC	18...75 VDC / 17...84 VDC	
27 VDC	17...36 VDC / 17...80 VDC	
48 VDC	36...75 VDC / 36...84 VDC	
Input filter	P-type	
Output specifications		
Output voltage adjustment (single-channel models only)		
Output voltage total regulation		
- for single-output execution (Inom 10 – 100%)	±4% (index «M») ±6% (index «T»)	
Ripple and noise (peak-to-peak)	<2% Uout	
Short circuit protection**	>150 % Iout nom, auto repair	
Over current protection**	<130 % Uout	
Overvoltage protection level**		
	MR100 Pout ... 1,5·Pout MR80 Pout ... 1,8·Pout	
Remote On/Off	Shuts down outputs by applying 0...1,1VDC or connection of output «ON» and «- IN», I≤5 mA	
General specifications		
Environment:		
temperature	- operating	- 60 °C...+85 °C (index «M») - 60 °C...+125 °C (index «T») ***
	- storage	- 60 °C...+85 °C (index «M») - 60 °C...+125 °C (index «T»)
	- power decrease (natural convection) - without power decrease with heatsink	See diagram (red line) See diagram (blue line)
humidity	100% @ 35 °C	
Without decrease in capacity at use with a radiator (provided that Tcase. The module does not exceed the maximal value) see blue curve		
Efficiency	82% for Uout=5 VDC 88% for Uout=24 VDC	
Thermal resistance case - environment	5,3 °C/W	
Conversion frequency	150 kHz	
Withstand voltage (input to ground, input to output, output to ground)	~355 VAC, 50 Hz	
Isolation resistance (input to ground, input to output, output to ground @ 500 VDC)	≥20 MOhm	
EMC standard	EN 55022, class A; EN 55022, class B with the additional filter BKJU.436610.011	
Safety standard	IEC/ EN 60950	
MTBF	>2,4 Mhrs min @ +25 °C	
Cooling metod	Free air convection or forced air cooling	

* All specifications are valid for normal climatic conditions, Uin.nom., Iout.nom., unless otherwise stated.

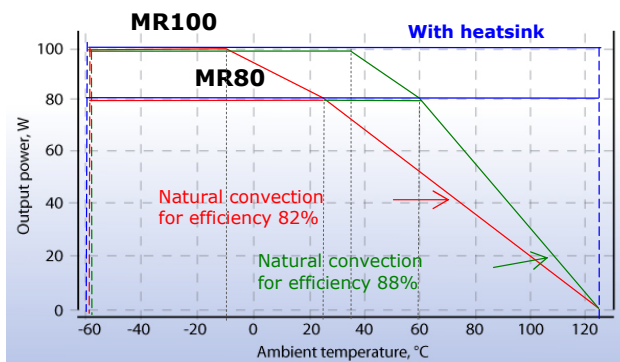
** Parameters are stated for the information purposes and could not be used at long term work, exciding maximum output current, at work outside of a range of working temperatures, at module's work with the output voltage over a range of adjustment.

*** The temperature of operation of thermal protection makes 118...125 °C for modules with the index «T».

Derating curves (index «M»)



Derating curves (index «T»)



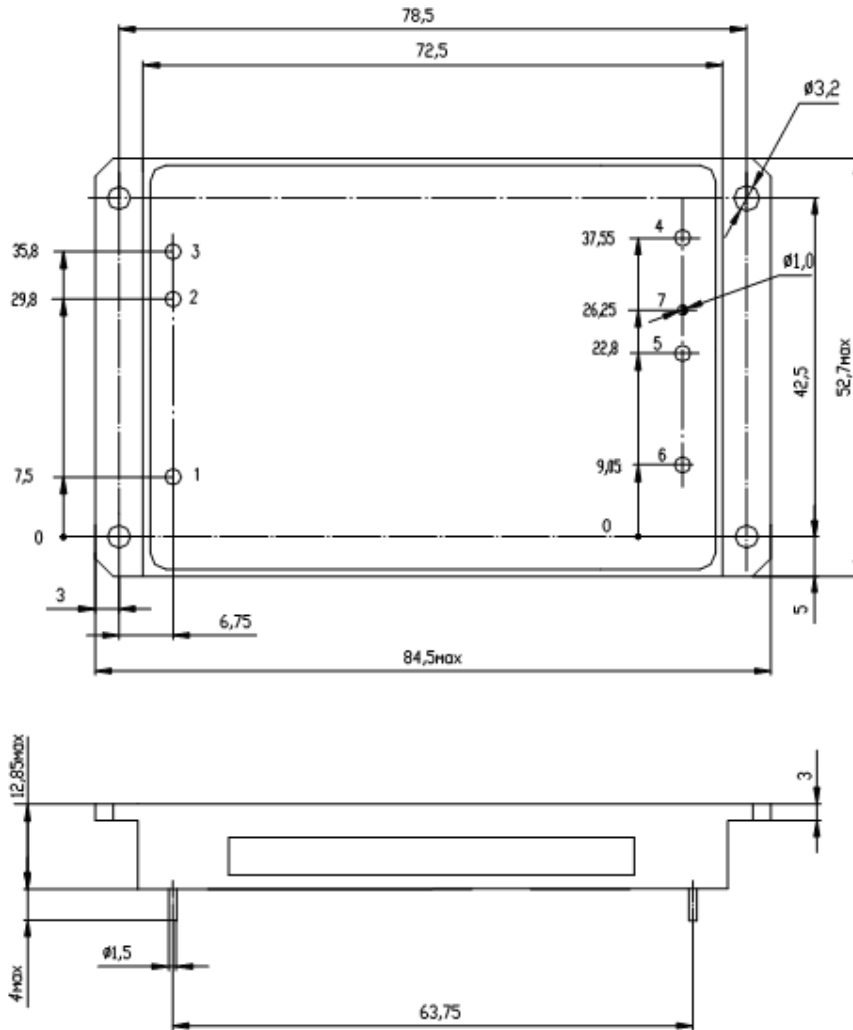
* The inclined site of a red and green curve specifies that the module works in a mode with **maximal Tcase** (index «N», «M» +85°C; index «T» +125 °C).

** It is not recommended to use this modules without the metal basis, which excludes formation of local overheats in the form of thermal stains on the module case. The basis can be the aluminium plate having the dimensions of the module and a thickness not less than 4 mm. The basis must have good thermal contact with the top surface of the case. It is necessary to use heat-removing paste for this purpose.

Pin out

N°pin	1	2	3	4	5	6	7
Single output	+ IN	- IN	ON	CASE	+ OUT	- OUT	ADJ

MR100, MR80 case with flanges



110 g