ALEXANDER ELECTRIC
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DC/DC converters
MISTRAL Series MR40, MR40-T

BKJU.436610.011

- **Completely replace power-supply modules MDM30-P series on dimensions and purpose of conclusions and have the improved characteristics**
- **Working temperature range from -60°C to +125°C**
- **Single and dual-output models**
- **Output voltage regulation**
- **Short circuit protection, overvoltage and thermal protection**
- **Remote on/off**
- **Coefficient of efficiency 82%**
- **Small size, low-profile**
- **Metal case**
- **Cooling by free air convection or a heat sink using**
- **Galvanic isolated outputs**

Ordering information

MR 40 D – 24 S 12 U T
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① - Mistral Series
② - Maximum output power, W
(limiting capacity 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 (10,5…18) VDC
24 VDC(18…36) VDC
27 VDC(17…36) VDC
48 VDC(36…75) VDC
⑤ - Output channels quantity
S – one
D – two
⑥ - Nominal output voltage, VDC
(two numbers on channel)
⑦ - Embodiment
U - reinforced aluminium frame with flanges
⑧ - Operating temperature range
M - -60°C…+85°C
T - -60°C…+125°C

Single-output models

Module	Input voltage range	Output power	Output voltage	Maximal output current
MR40D-12S05-UM	**10,5…18 VDC**	**40 W**	5 VDC	8 A
MR40D-12S15-UM			15 VDC	2,67 A
MR40D-12S24-UM			24 VDC	1,67 A
MR40D-12S27-UM			27 VDC	1,48 A
MR40D-24S05-UM	**18…36(40) VDC**	**40 W**	5 VDC	8 A
MR40D-24S15-UM			15 VDC	2,67 A
MR40D-24S24-UM			24 VDC	1,67 A
MR40D-24S27-UM			27 VDC	1,48 A
MR40D-27S05-UM	**17…36(80) VDC**	**40 W**	5 VDC	8 A
MR40D-27S15-UM			15 VDC	2,67 A
MR40D-27S24-UM			24 VDC	1,67 A
MR40D-27S27-UM			27 VDC	1,48 A
MR40D-48S05-UM	**36…75 VDC**	**40 W**	5 VDC	8 A
MR40D-48S15-UM			15 VDC	2,67 A
MR40D-48S24-UM			24 VDC	1,67 A
MR40D-48S27-UM			27 VDC	1,48 A

Dual-output models

Module	Input voltage range	Output power	Output voltage	Maximal output current
MR40D-12D0512-UM	**10,5…18 VDC**	**40 W**	5 VDC / 12 VDC	4 A / 1,67 A
MR40D-12D0515-UM			5 VDC / 15 VDC	4 A / 1,33 A
MR40D-12D1515-UM			15 VDC / 15 VDC	1,33 A / 1,33 A
MR40D-24D0512-UM	**18…36(40) VDC**	**40 W**	5 VDC / 12 VDC	4 A / 1,67 A
MR40D-24D0515-UM			5 VDC / 15 VDC	4 A / 1,33 A
MR40D-24D1515-UM			15 VDC / 15 VDC	1,33 A / 1,33 A
MR40D-27D0512-UM	**17…36(80) VDC**	**40 W**	5 VDC / 12 VDC	4 A / 1,67 A
MR40D-27D0515-UM			5 VDC / 15 VDC	4 A / 1,33 A
MR40D-27D1515-UM			15 VDC / 15 VDC	1,33 A / 1,33 A
MR40D-48D0512-UM	**36…75 VDC**	**40 W**	5 VDC / 12 VDC	4 A / 1,67 A
MR40D-48D0515-UM			5 VDC / 15 VDC	4 A / 1,33 A
MR40D-48D1515-UM			15 VDC / 15 VDC	1,33 A / 1,33 A

✶ By request can be delivered modules with non-standard output voltage 3 to 80VDC and with maximal output current to 8A.

http://www.aeps-group.com
e-mail: aeps@aeps-group.com
tel/fax: +420-266-107-609

http://www.aeps-group.com
e-mail: alexdon@vmail.ru
tel/fax (4732) 519-518

DC/DC converters
MISTRAL Series MR40, MR40-T

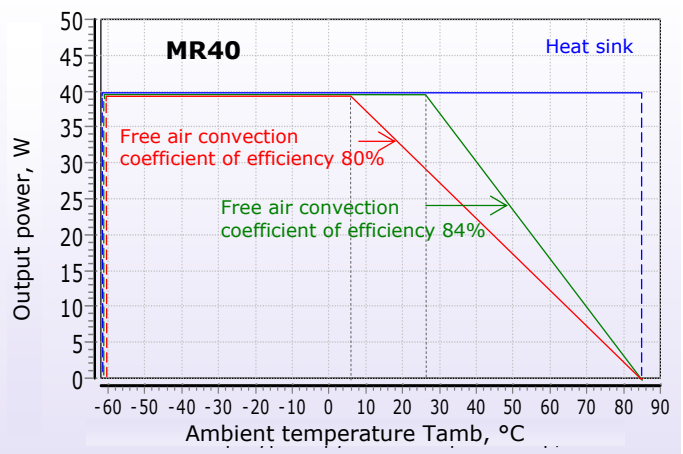
Technical specifications according to BKJU.436610.011

Input specifications		
Input voltage range/ transitional deviation, 1 sec	12 VDC 24 VDC 27 VDC 48 VDC	10,5…18VDC/ 10,5…18VDC 18…36VDC/17..37,8VDC 17…36VDC/17…80VDC 36…75VDC/36…84VDC
Input filter		P-type
Output specifications		
Output voltage trimming range (for single-, dual-output execution with same voltage)		±5%
Output voltage total instability		
- for single-output execution (Inom 10 – 100%)		±4% (index "M") ±6% (index "T")
- for multi-output execution (Inom 10 – 100%)		±4% for out1 ±7% for out2 (index "M") ±6% for out1 ±10% for out2 (index "T")
- for multi-output execution with distinction voltage ≥20%		±4% for out1 ±14% for out2&3 (index "M") ±6% for out1 ±14% for out2&3 (index "T")
Pulsations ripple (peak-to-peak)		<2% Uout.nom.
Overload protection level**		>120% Iout.nom.
Short circuit protection level**		>150 % Iout.nom., autorepair
Overvoltage protection level**		>120 % Uout.nom.
Remote on/off		Off: 0…1,1VDC or connection of output «ON» and «- IN», I≤5 mA
General specifications		
Temperature - high working of case		– 60 °C…+85 °C (index "M") – 60 °C…+125 °C (index "T")
Temperature - storage		– 60 °C…+85 °C (index "M") – 60 °C…+125 °C (index "T")
[1] - power loss (free air convection)		See diagram (red, green lines)
Without power loss with radiator use (provided that Tcase. The module does not exceed the maximal value) see blue curve		
Efficiency		82 %
Thermal resistance case - environment		7,8 ºC/Watt
Conversion frequency		150 kHz
Isolation - voltage in/out: in/case: out/case:		~ 355 VDC, 50 Hz
Insulation resistance @ 500VDC		≥20 Ohm
External factors stability		
- high humidity		100% @ 35°C
EMC standard		EN 55022, class A
Safety standard		IEC/ EN 60950
Time to failure		> 2 400 000 hours @ +25°C
Cooling		Free air convection or heat sink using
Case material		Metal

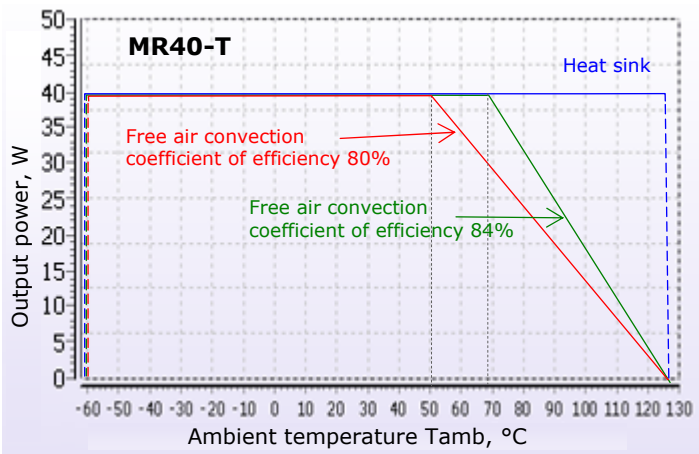
✶ All specifications are reduced for normal climatic conditions, Uin.nom, Iout.nom, if it is not specified differently.

✶✶ Parameters are help and cannot be used at long-term work, excess of the maximal target current, at work outside of a range of working temperatures, at work of the module with target voltage over a range of adjustment

Power loss diagram (index «M»)



Power loss diagram (index «T»)



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

Output settings

№ pin	1	2	3	4	5	6	7	8
Single-output	Case.	+ in	- in	On/off	+ out	- out	Trim.	-
Dual-output	Case.	+ in	- in	On/off	+ out 1	+ out 2	- out 2	- out 1

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e-mail: aeps@aeps-group.com
tel/fax: +420-266-107-609

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e-mail: alexdon@vmail.ru
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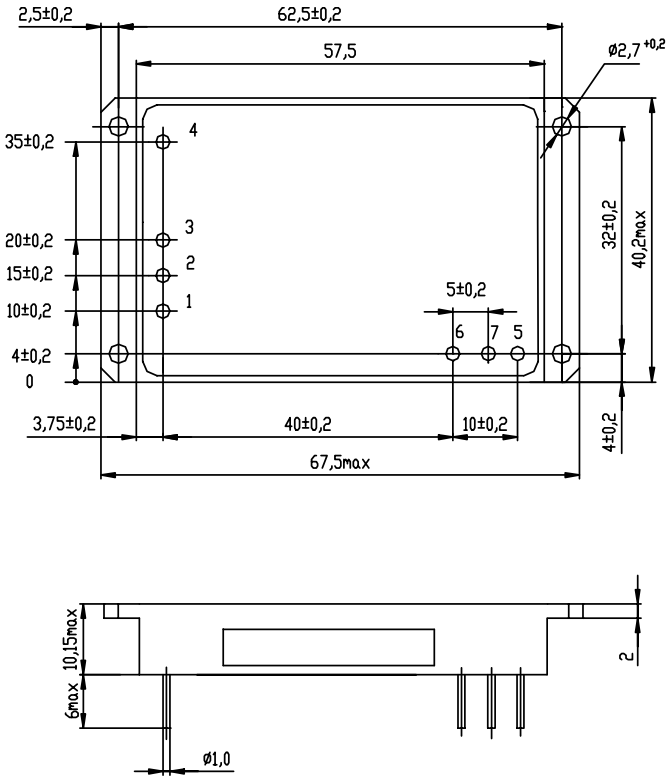
MR40-S case with flanges



MR40-D case with flanges