



## Caratteristica M

Larghezza di soli 52,5 mm (3SU)
Campo di ingresso ultra ampio 4:1
Temperatura di lavoro ampia -40 +85 "C
Nessun carico minimo richiesto
Uscita DC regolabile (T 10%)
Raffreddamento per convezione ad aria libera

- Può essere installato su guida DIN TS-35/7,5 o 15 Protezioni: Cortocircuito / Sovraccarico / Sovraccarico di tensione / Inversione di polarità in ingresso / Protezione da sottotensione in ingresso
  Isolamento I/O 4KVdc (isolamento rinforzato)
- 3 anni di garanzia

## M Applicazioni

Sistema di controllo industriale
Apparecchiature per la produzione di semiconduttori Automazione di fabbrica
Elettromeccanica Rete wireless
Sistema di telecomunicazione o datacom

## Descrizione del prodotto

La serie DDR-60 è un convertitore CC-CC da 60W su guida DIN con caratteristiche principali quali la facilità di installazione su guida DIN, la larghezza ultra sottile (52,5 mm), la tensione di ingresso ultra ampia 4:1, la temperatura di funzionamento ampia da -40 a +85 °C, l'isolamento I/O a 4KVdc, la tensione di uscita regolabile (+ 1 0%) e le funzioni di protezione complete...ecc.

Questa serie dispone di due opzioni di ingresso: 9 36V /18 75V e diverse opzioni di uscita: 5V / 12V / 15V / 24V e può essere utilizzata per il controllo industriale, il controllo di sicurezza, il sistema di comunicazione e altri campi. Le applicazioni più adatte sono il regolatore buck/boost DC, l'aumento del livello di isolamento del sistema e la compensazione della caduta di tensione lungo il cavo... ecc.

## Modello Codifica DDR - 60 G - 24

Tensione di uscita (5/12/15/24Vdc)
Tensione d'ingresso (G : 9 36Vdc, L:18 75Vdc)
Potenza nominale
Nome della serie

MEAN WELL

60W DIN Rail Type DC-DC Converter

# DDR-60 series

## SPECIFICATION

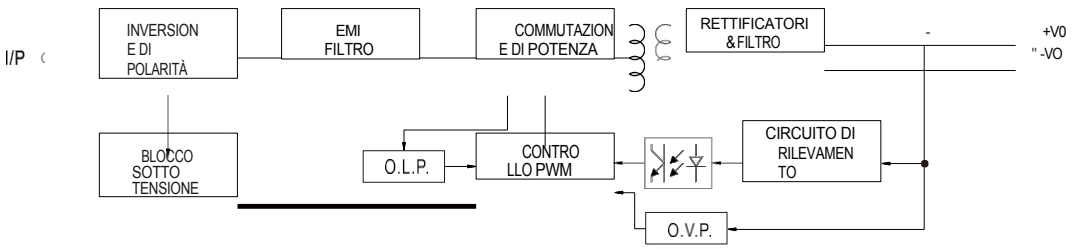
| MODEL | | DDR-60G-5 | DDR-60G-12 | DDR-60G-15 | DDR-60G-24 | DDR-60L-5 | DDR-60L-12 | DDR-60L-15 | DDR-60L-24 |
|---|---|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 5V | 12V | 15V | 24V | 5V | 12V | 15V | 24V |
| | RATED CURRENT | 10.8A | 5A | 4A | 2.5A | 12A | 5A | 4A | 2.5A |
| | CURRENT RANGE | 0 ~ 10.8A | 0 ~ 5A | 0 ~ 4A | 0 ~ 2.5A | 0 ~ 12A | 0 ~ 5A | 0 ~ 4A | 0 ~ 2.5A |
| | RATED POWER | 54W | 60W | 60W | 60W | 60W | 60W | 60W | 60W |
| | RIPPLE & NOISE (max.) Note.2 | 60mVp-p | | | | 60mVp-p | 75mVp-p | 75mVp-p | 100mVp-p |
| | VOLTAGE ADJ. RANGE | 4.5 ~ 5.5V | 9 ~ 13.2V | 13.5 ~ 16.5V | 21.6 ~ 28V | 4.5 ~ 5.5V | 9 ~ 13.2V | 13.5 ~ 16.5V | 21.6 ~ 28V |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | | | | ±2.0% | ±2.0% | ±2.0% | ±2.0% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±1.5% | ±0.5% | ±0.5% | ±0.5% | ±1.5% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 120ms, 85ms at full load | | | | | | | |
| | | G-type: 5ms@24Vdc input | | | | L-type: 10ms@48Vdc input | | | |
| | EXTERNAL CAPACITANCE LOAD (Max.) | 6800μF | 4700μF | 3300μF | 2200μF | 6800μF | 4700μF | 3300μF | 2200μF |
| INPUT | VOLTAGE RANGE Note.4 | 9 ~ 36Vdc | | | | 18 ~ 75Vdc | | | |
| | EFFICIENCY (Typ.) | 87.5% | 91% | 91% | 91% | 87.5% | 91% | 92% | 92% |
| | | 3A /24Vdc | | | | 1.5A /48Vdc | | | |
| | INRUSH CURRENT (Typ.) | 20A /24Vdc | | | | 20A /48Vdc | | | |
| PROTECTION | OVERLOAD | 105 ~ 135% rated output power | | | | | | | |
| | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | |
| | OVER VOLTAGE | 5.75~ 7V | 13.8~16.2V | 17.25 ~ 20.25V | 28.8~ 34V | 5.75~ 7V | 13.8~16.2V | 17.25~ 20.25V | 28.8~ 34V |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | | | | | | |
| | REVERSE POLARITY | By internal MOSFET, no damage, recovers automatically after fault condition removed | | | | | | | |
| | UNDER VOLTAGE LOCKOUT | 24Vin (G-type):Power ON≥9V , OFF≤8.5V | | | | | | | |
| | | 48Vin (L-type):Power ON≥18V , OFF≤17V | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +85℃ (Refer to "Derating Curve") | | | | | | | |
| | WORKING HUMIDITY | 5 ~ 95% RH non-condensing | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85℃, 5 ~ 95% RH non-condensing | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~60℃) | | | | | | | |
| | VIBRATION | Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6 | | | | | | | |
| | OPERATING ALTITUDE | 2000 meters | | | | | | | |
| SAFETY & EMC (Note 5) | SAFETY STANDARDS | IEC 62368-1 (LVD), AS/NZS 62368.1 approved; Design refer to UL508 | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:4KVdc | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P>100M Ohms / 500Vdc / 25℃/ 70% RH | | | | | | | |
| | EMC EMISSION | Parameter | Standard | Test Level/ Note | | | | | |
| | | Conducted | EN55032 | Class A | | | | | |
| | | Radiated | EN55032 | Class A for 1m I/O cable , Class B for 30cm I/O cable | | | | | |
| | | Voltage Flicker | EN61000-3-3 | ---- | | | | | |
| | EMC IMMUNITY | EN55024 , EN61000-6-2(EN50082-2) | | | | | | | |
| | | Parameter | Standard | Test Level / Note | | | | | |
| | | ESD | EN61000-4-2 | Level 3, 8KV air ; Level 3, 6KV contact; criteria A | | | | | |
| | | Radiated | EN61000-4-3 | Level 3, 10V/m ; criteria A | | | | | |
| | | EFT / Burst | EN61000-4-4 | Level 3, 2KV ; criteria A | | | | | |
| | | Surge | EN61000-4-5 | Level 3, 1KV/Line-Line ; criteria A | | | | | |
| | | Conducted | EN61000-4-6 | Level 3, 10V ; criteria A | | | | | |
| | | Magnetic Field | EN61000-4-8 | Level 4, 30A/m ; criteria A | | | | | |
| OTHERS | MTBF | 611K hrs min. MIL-HDBK-217F (25℃) | | | | | | | |
| | DIMENSION | | | | | | | | |
| | PACKING | 216g; 60pcs/14Kg/0.97CUFT | | | | | | | |

NOTE

1. All parameters NOT specially mentioned are measured at normal input (G:24Vdc, L:48Vdc), rated load and 25℃ of ambient temperature
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μf & 47 μf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the derating curve for more details.
5. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)
6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft)

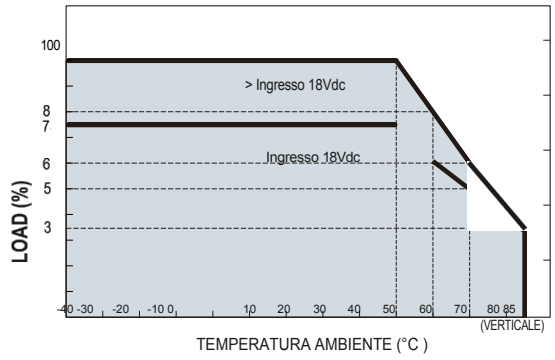
## Schema a blocchi B

fosc : 130KHz

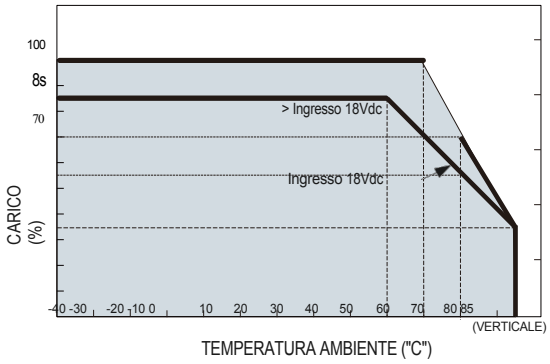



## Curva di declassamento B

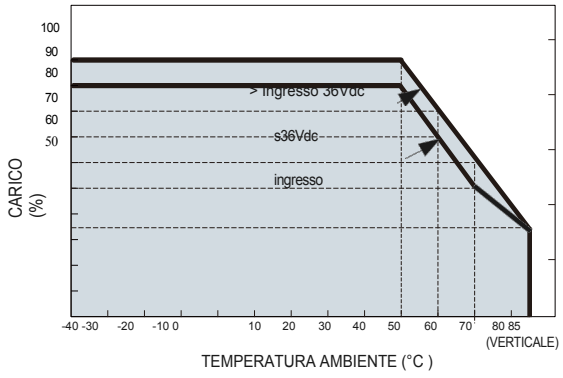
DDR-60G-5



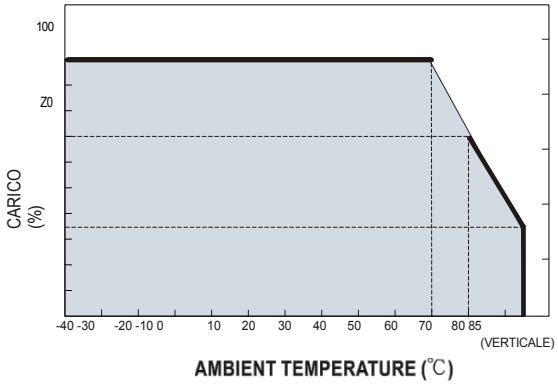

DDR-60G-12/15/24



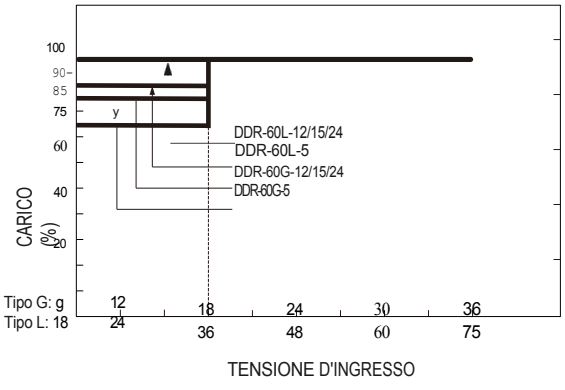

DDR-60L-5



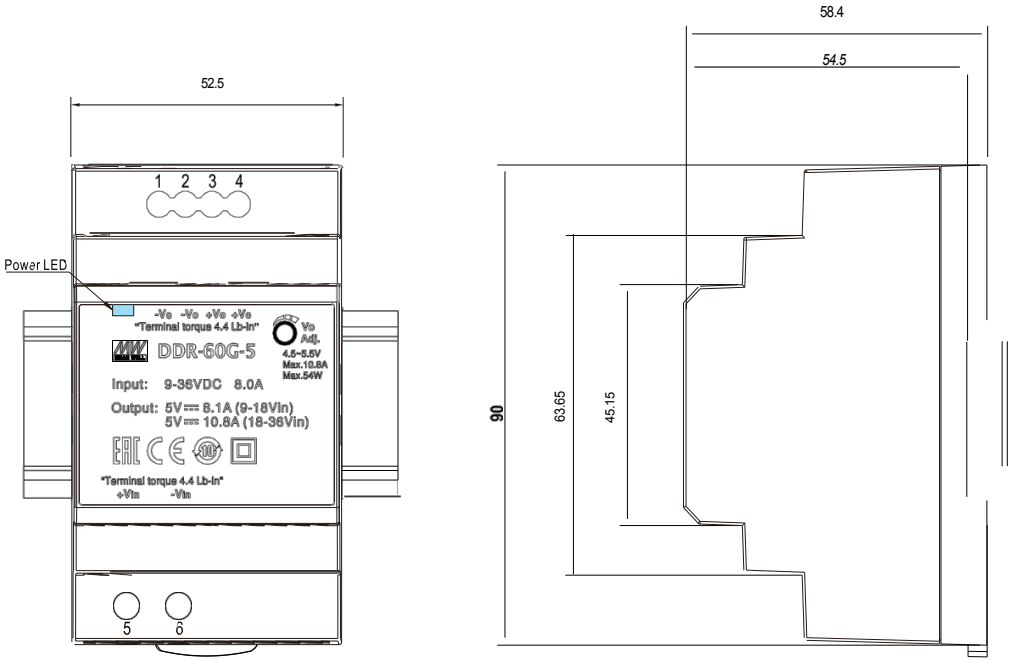

DDR-60L-12/15/24

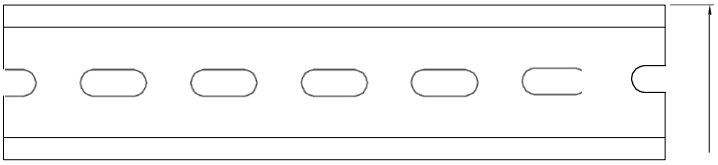



## B Derating di uscita VS tensione di ingresso



## B Specifiche meccaniche



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

| N. pin | Assegnazione |
|---|---|
| 1,2 | Uscita CC -Vo |
| 3,4 | Uscita CC +Vo |
| 5 | Ingresso DC +Vin |
| 6 | Ingresso DC -Vin |

## B Manuale di installazione

Fare riferimento a: http://www.meanwell.com/manual.html