



Feature

- Width only 17.5mm (1SU)
- 4:1 ultra wide input range
- -40~+85°C wide working temperature
- No minimum load required
- DC output adjustable ($\pm 10\%$)
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Protections: Short circuit / Overload / Over voltage / Input reverse polarity / Input under voltage protection
- 4KVdc I/O isolation(Reinforced isolation)
- 3 years warranty

Applications

- Industrial control system
- Semi-conductor fabrication equipment
- Factory automation
- Electro-mechanical
- Wireless network
- Telecom or datacom system

GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

Description

DDR-15 series is a 15W DIN Rail type DC-DC converter with main features including DIN rail-type easy installation, ultra slim width (17.5mm), 4: 1 ultra wide input voltage, -40~+85°C wide operating temperature, 4KVdc I/O isolation, adjustable output voltage ($\pm 10\%$) and full protective functions...etc.

This series has two input options: 9~36V / 18~75V and various output options: 3.3V / 5V / 12V / 15V / 24V and can be used for industrial control, security control, communication system and other fields. Suitable applications are DC buck/boost regulator, increasing system insulation level and voltage drop compensation along cable...etc.

Model Encoding

DDR - 15 G -24

- Output voltage(3.3/5/12/15/24Vdc)
- Input voltage (G: 9~36Vdc, L: 18~75Vdc)
- Rated wattage
- Series name



SPECIFICATION

| MODEL | | DDR-15G-3.3 | DDR-15G-5 | DDR-15G-12 | DDR-15G-15 | DDR-15G-24 |
|----------------------------------|--|---|-----------------------------|---------------------------|---|--------------|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 12V | 15V | 24V |
| | RATED CURRENT | 3.5A | 3A | 1.25A | 1A | 0.63A |
| | CURRENT RANGE | 0 ~ 3.5A | 0 ~ 3A | 0 ~ 1.25A | 0 ~ 1A | 0 ~ 0.63A |
| | RATED POWER | 11.6W | 15W | 15W | 15W | 15W |
| | RIPPLE & NOISE (max.) Note.2 | 50mVp-p | 50mVp-p | 60mVp-p | 75mVp-p | 100mVp-p |
| | VOLTAGE ADJ. RANGE | 3.0 ~ 3.6V | 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% |
| | LOAD REGULATION | ±1.5% | ±1% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 120ms, 85ms at full load | | | | |
| HOLD UP TIME (Typ.) | G-type: 8ms@24Vdc input | | | | | |
| EXTERNAL CAPACITANCE LOAD (Max.) | 3300 μ F | 3300 μ F | 1200 μ F | 1200 μ F | 680 μ F | |
| INPUT | VOLTAGE RANGE Note.4 | 9 ~ 36Vdc | | | | |
| | EFFICIENCY (Typ.) | 84% | 84% | 85% | 85% | 86% |
| | DC CURRENT (Typ.) | 0.8A /24Vdc | | | | |
| | INRUSH CURRENT (Typ.) | 15A /24Vdc | | | | |
| PROTECTION | OVERLOAD | 110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | |
| | OVER VOLTAGE | 3.8 ~ 4.7V | 5.75 ~ 7V | 13.8 ~ 16.2V | 17.25 ~ 20.25V | 28.8 ~ 32.4V |
| | REVERSE POLARITY | By internal MOSFET, no damage, recovers automatically after fault condition removed | | | | |
| | UNDER VOLTAGE LOCKOUT | Power ON ≥9V , OFF ≤8.5V Protection type : Shut down o/p voltage, re-power on to recover | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +85°C (Refer to "Derating Curve") | | | | |
| | WORKING HUMIDITY | 5 ~ 95% RH non-condensing | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C , 5 ~ 95% RH non-condensing | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 60°C) | | | | |
| | VIBRATION | Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6 | | | | |
| | OPERATING ALTITUDE | 5000 meters | | | | |
| SAFETY & EMC (Note 5) | SAFETY STANDARDS | UL 62368-1, IEC 62368-1, AS/NZS 62368.1, EAC TP TC 004 approved | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:4KVdc | | | | |
| | ISOLATION RESISTANCE | I/P-O/P>100M Ohms / 500Vdc / 25°C / 70% RH | | | | |
| | EMC EMISSION | Parameter | Standard | | Test Level / Note | |
| | | Conducted | BS EN/EN55032 | | Class B | |
| | | Radiated | BS EN/EN55032 | | Class B | |
| | | Voltage Flicker | BS EN/EN61000-3-3 | | ----- | |
| | EMC IMMUNITY | BS EN/EN55035 , BS EN/EN61000-6-2(BS EN/EN50082-2) | | | | |
| | | Parameter | Standard | | Test Level / Note | |
| | | ESD | BS EN/EN61000-4-2 | | Level 3, 8KV air ; Level 3, 6KV contact; criteria A | |
| | | Radiated | BS EN/EN61000-4-3 | | Level 3, 10V/m ; criteria A | |
| | | EFT / Burst | BS EN/EN61000-4-4 | | Level 3, 2KV ; criteria A | |
| | | Surge | BS EN/EN61000-4-5 | | Level 3, 1KV/Line-Line ; criteria A | |
| Conducted | | BS EN/EN61000-4-6 | | Level 3, 10V ; criteria A | | |
| Magnetic Field | BS EN/EN61000-4-8 | | Level 4, 30A/m ; criteria A | | | |
| OTHERS | MTBF | 3446.2K hrs min. Telcordia SR-332 (Bellcore) ; 907.2K hrs min. MIL-HDBK-217F (25°C) | | | | |
| | DIMENSION | 17.5*90*54.5mm (W*H*D) | | | | |
| | PACKING | 68g; 160pcs/12Kg/1.14CUFT | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 24VDC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ F & 47 μ F parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltage. Please check the derating curve for more details.</p> <p>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 https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf)</p> <p>6. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | |

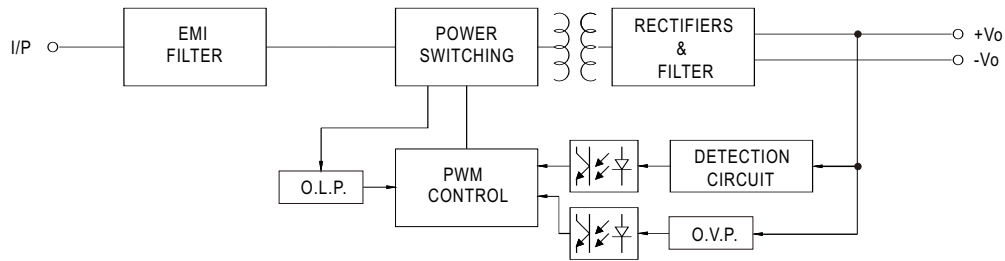


SPECIFICATION

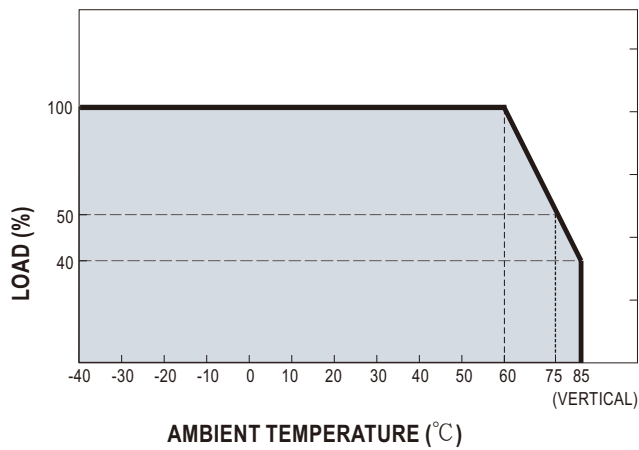
| MODEL | | DDR-15L-3.3 | DDR-15L-5 | DDR-15L-12 | DDR-15L-15 | DDR-15L-24 |
|----------------------------------|---|---|-------------------|-----------------------------|---|--------------|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 12V | 15V | 24V |
| | RATED CURRENT | 4.5A | 3A | 1.25A | 1A | 0.63A |
| | CURRENT RANGE | 0 ~ 4.5A | 0 ~ 3A | 0 ~ 1.25A | 0 ~ 1A | 0 ~ 0.63A |
| | RATED POWER | 15W | 15W | 15W | 15W | 15W |
| | RIPPLE & NOISE (max.) Note.2 | 50mVp-p | 50mVp-p | 60mVp-p | 75mVp-p | 100mVp-p |
| | VOLTAGE ADJ. RANGE | 3.0 ~ 3.6V | 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% |
| | LOAD REGULATION | ±1.5% | ±1% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 120ms, 85ms at full load | | | | |
| | HOLD UP TIME (Typ.) | L-type: 16ms@48Vdc input | | | | |
| EXTERNAL CAPACITANCE LOAD (Max.) | 3300 μF | 3300 μF | 1200 μF | 1200 μF | 680 μF | |
| INPUT | VOLTAGE RANGE Note.4 | 18 ~ 75Vdc | | | | |
| | EFFICIENCY (Typ.) | 84% | 85% | 86% | 86% | 87% |
| | DC CURRENT (Typ.) | 0.4A/48Vdc | | | | |
| | INRUSH CURRENT (Typ.) | 15A/48Vdc | | | | |
| PROTECTION | OVERLOAD | 110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | |
| | OVER VOLTAGE | 3.8 ~ 4.7V | 5.75 ~ 7V | 13.8 ~ 16.2V | 17.25 ~ 20.25V | 28.8 ~ 32.4V |
| | | 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 | Power ON ≥ 18V, OFF ≤ 17V | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +85°C (Refer to "Derating Curve") | | | | |
| | WORKING HUMIDITY | 5 ~ 95% RH non-condensing | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 5 ~ 95% RH non-condensing | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 60°C) | | | | |
| | 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°C / 70% RH | | | | |
| | EMC EMISSION | Parameter | Standard | | Test Level / Note | |
| | | Conducted | BS EN/EN55032 | | Class B | |
| | | Radiated | BS EN/EN55032 | | Class B | |
| | | Voltage Flicker | BS EN/EN61000-3-3 | | ----- | |
| | EMC IMMUNITY | BS EN/EN55035, BS EN/EN61000-6-2(BS EN/EN50082-2) | | | | |
| | | Parameter | Standard | | Test Level / Note | |
| | | ESD | BS EN/EN61000-4-2 | | Level 3, 8KV air ; Level 3, 6KV contact; criteria A | |
| | | Radiated | BS EN/EN61000-4-3 | | Level 3, 10V/m ; criteria A | |
| | | EFT / Burst | BS EN/EN61000-4-4 | | Level 3, 2KV ; criteria A | |
| | | Surge | BS EN/EN61000-4-5 | | Level 3, 1KV/Line-Line ; criteria A | |
| | | Conducted | BS EN/EN61000-4-6 | | Level 3, 10V ; criteria A | |
| Magnetic Field | | BS EN/EN61000-4-8 | | Level 4, 30A/m ; criteria A | | |
| OTHERS | MTBF | 907K hrs min. MIL-HDBK-217F (25°C) | | | | |
| | DIMENSION | 17.5*90*54.5mm (W*H*D) | | | | |
| | PACKING | 68g; 160pcs/12Kg/1.19CUFT | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 48VDC input, rated load and 25°C of ambient temperature.</p> <p>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.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltage. Please check the derating curve for more details.</p> <p>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 https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf)</p> <p>6. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | |

Block Diagram

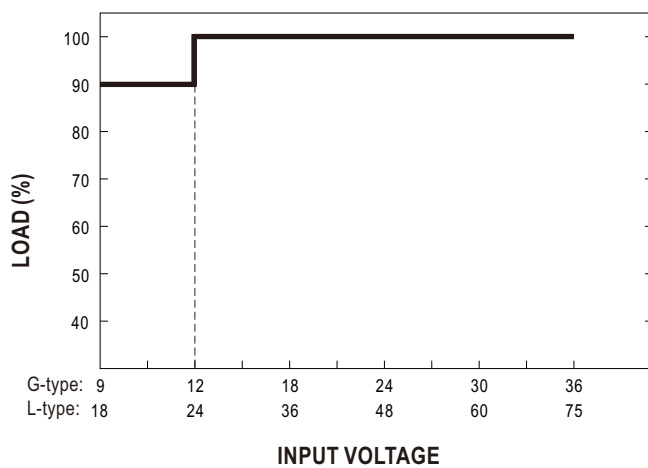
fosc : 100KHz



Derating Curve



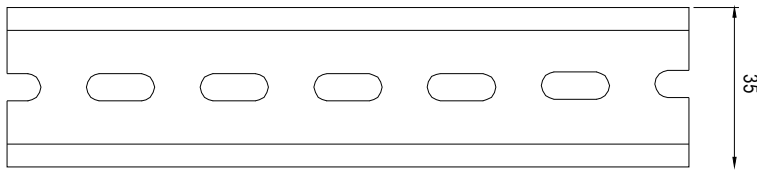
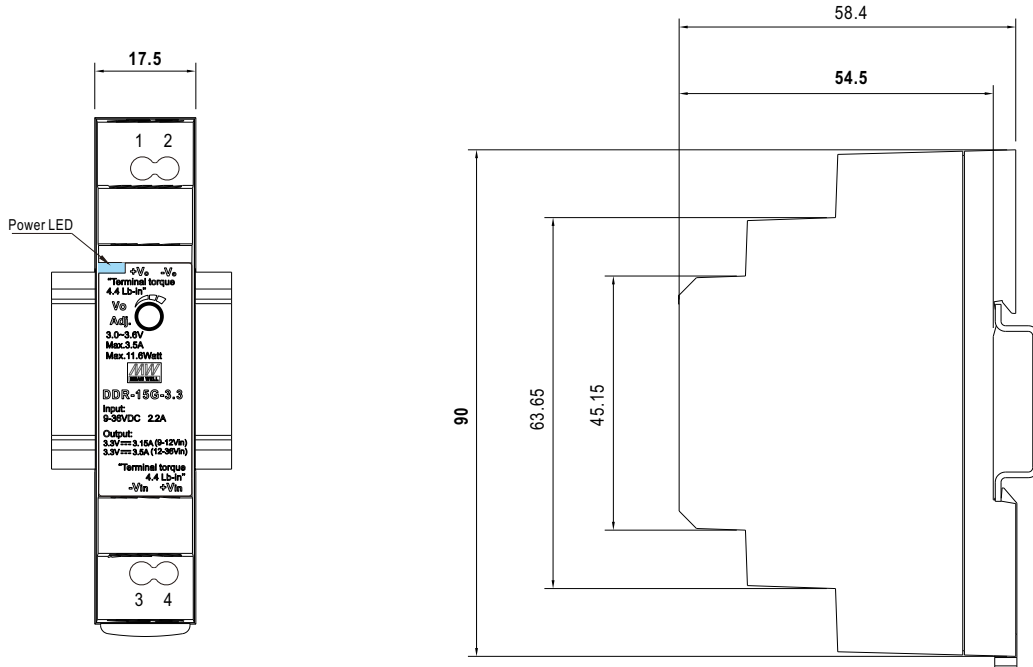
Output derating VS input voltage



G-type: 9 12 18 24 30 36
 L-type: 18 24 36 48 60 75

■ Mechanical Specification

(Unit: mm , tolerance $\pm 0.5\text{mm}$)



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

Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|---------------|
| 1 | DC Output +Vo |
| 2 | DC Output -Vo |
| 3 | DC Input -Vin |
| 4 | DC Input +Vin |

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>

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