



User's Manual



## Features

- Ultra slim design with 70mm(4SU) width
- Universal input 85~264VAC(277VAC operational)
- No load power consumption<0.3W
- Isolation class II
- Pass LPS (Limited power source) for Blank type
- DC output voltage adjustable
- Protections : Short circuit / Overload / Over voltage
- Cooling by free air convection (working temperature:-30~+70°C)
- DIN rail TS-35/7.5 or 15 mountable
- LED indicator for power on
- 3 years warranty

## Applications

- Household control system
- Building automation
- Industrial control system
- Factory automation
- Electro-mechanical apparatus

## GTIN CODE

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

## Description

HDR-100 is one economical ultra slim 100W DIN rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The body is designed 70mm(4SU) in width, which allows space saving inside the cabinets. The entire series adopts the full range AC input from 85VAC to 264VAC(277VAC operational) and conforms to BS EN/EN61000-3-2, the norm the European Union regulates for harmonic current. HDR-100 is designed with plastic housing that it can effectively prevent user from electric hazards. With working efficiency up to 90%, the entire series can operate at the ambient temperature between -30°C and 70°C under air convection. The complete protection functions and relevant certificates for home automations and industrial control apparatus (IEC62368-1, UL508, UL62368-1, BS EN/EN61558-2-16) make HDR-100 a very competitive power supply solution for household and industrial applications.

## Model Encoding

HDR - 100 - 12 N

Performance difference

Output voltage

Rated wattage

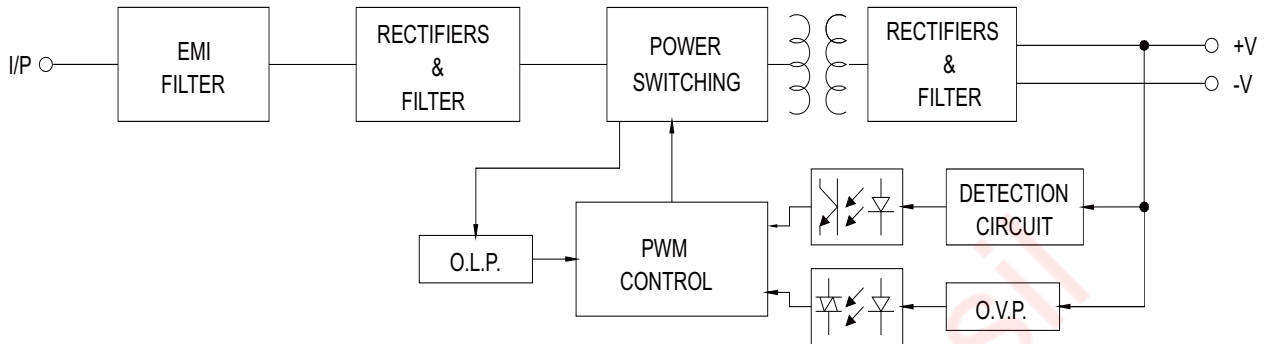
Series name

| Type  | Description                                               | Note     |
|-------|-----------------------------------------------------------|----------|
| Blank | 92W max, Pass LPS with a narrower output adjustable range | In stock |
| N     | 100W max, Non-LPS with a wider output adjustable range    | In stock |

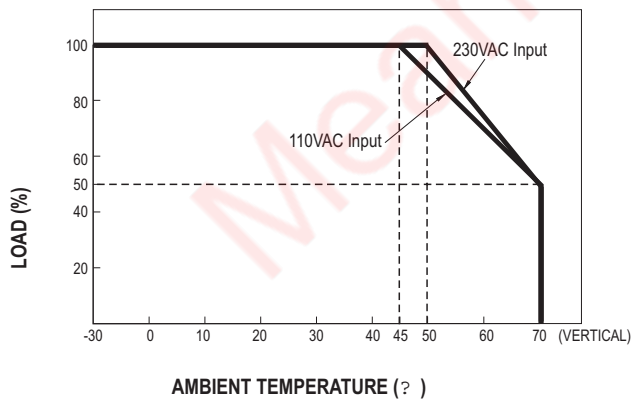
## SPECIFICATION

| MODEL                                                           |                              |             | HDR-100-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | HDR-100-12N | HDR-100-15                       | HDR-100-15N                                                                    | HDR-100-24                        | HDR-100-24N                                        | HDR-100-48   | HDR-100-48N |
|-----------------------------------------------------------------|------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|--------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------|--------------|-------------|
| OUTPUT                                                          | DC VOLTAGE                   |             | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | 15V                              |                                                                                | 24V                               |                                                    | 48V          |             |
|                                                                 | RATED CURRENT                |             | 7.1A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.5A        | 6.13A                            | 6.5A                                                                           | 3.83A                             | 4.2A                                               | 1.92A        | 2.1A        |
|                                                                 | CURRENT RANGE                |             | 0 ~ 7.1A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 ~ 7.5A    | 0 ~ 6.13A                        | 0 ~ 6.5A                                                                       | 0 ~ 3.83A                         | 0 ~ 4.2A                                           | 0 ~ 1.92A    | 0 ~ 2.1A    |
|                                                                 | RATED POWER                  |             | 85.2W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 90W         | 92W                              | 97.5W                                                                          | 92W                               | 100.8W                                             | 92.2W        | 100.8W      |
|                                                                 | RIPPLE & NOISE (max.) Note.2 |             | 120mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | 120mVp-p                         |                                                                                | 150mVp-p                          |                                                    | 240mVp-p     |             |
|                                                                 | VOLTAGE ADJ. RANGE           | Pass LPS    | 12 ~ 13V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | 15 ~ 17V                         |                                                                                | 24 ~ 25.5V                        |                                                    | 48 ~ 48.7V   |             |
|                                                                 |                              | Non LPS     | 12~ 13.8V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | 13.5 ~ 18V                       |                                                                                | 21.6 ~ 29V                        |                                                    | 43.2 ~ 55.2V |             |
|                                                                 | VOLTAGE TOLERANCE Note.3     |             | ± 2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             | ± 1.0%                           |                                                                                | ± 1.0%                            |                                                    | ± 1.0%       |             |
|                                                                 | LINE REGULATION              |             | ± 1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             | ± 1.0%                           |                                                                                | ± 1.0%                            |                                                    | ± 1.0%       |             |
|                                                                 | LOAD REGULATION              |             | ± 1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             | ± 1.0%                           |                                                                                | ± 1.0%                            |                                                    | ± 1.0%       |             |
|                                                                 | SETUP, RISE TIME             |             | 500ms, 60ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                  |                                                                                | 500ms, 60ms/115VAC at full load   |                                                    |              |             |
| HOLD UP TIME (Typ.)                                             |                              | 30ms/230VAC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                  | 12ms/115VAC at full load                                                       |                                   |                                                    |              |             |
| INPUT                                                           | VOLTAGE RANGE                |             | 85 ~ 264VAC (277VAC operational)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                  |                                                                                | 120 ~ 370VDC (390VDC operational) |                                                    |              |             |
|                                                                 | FREQUENCY RANGE              |             | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | EFFICIENCY (Typ.)            |             | 88%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | 89%                              |                                                                                | 90%                               |                                                    | 90%          |             |
|                                                                 | AC CURRENT (Typ.)            |             | 3A/115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                  |                                                                                | 1.6A/230VAC                       |                                                    |              |             |
|                                                                 | INRUSH CURRENT (Typ.)        |             | COLD START 35A/115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                                  |                                                                                | 70A/230VAC                        |                                                    |              |             |
| PROTECTION                                                      | OVERLOAD                     |             | HDR-100 : 102 ~ 110% rated output power ; HDR-100-xxN : 105 ~ 150% rated output power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 |                              |             | Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed<br>Constant current limiting within 50% ~ 100% rated output voltage, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | OVER VOLTAGE                 |             | 14.2 ~ 16.2V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             | 18.8 ~ 22.5V                     |                                                                                | 30 ~ 36V                          |                                                    | 56.5 ~ 64.8V |             |
| Protection type : Shut down o/p voltage, re-power on to recover |                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                  |                                                                                |                                   |                                                    |              |             |
| ENVIRONMENT                                                     | WORKING TEMP.                |             | -30 ~ +70°C (Refer to "Derating Curve")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | WORKING HUMIDITY             |             | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | STORAGE TEMP., HUMIDITY      |             | -40 ~ +85°C, 10 ~ 95% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | TEMP. COEFFICIENT            |             | ± 0.03%/°C (0 ~ 50°C) RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | VIBRATION                    |             | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | OPERATING ALTITUDE           |             | 2000 meters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | OVER VOLTAGE CATEGORY        |             | III : According to EN61558, EN50178, EN60664-1, EN62477-1 ; altitude up to 2000 meters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |                                  |                                                                                |                                   |                                                    |              |             |
| SAFETY & EMC<br>(Note 5)                                        | SAFETY STANDARDS             |             | UL62368-1, UL508, TUV BS EN/EN61558-2-16, BS EN/EN61558-1, IEC62368-1, EAC TP TC 004, BSMI CNS14336-1 approved; Design refer to TUV BS EN/EN62368-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | WITHSTAND VOLTAGE            |             | I/P-O/P:4KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | ISOLATION RESISTANCE         |             | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | EMC EMISSION                 |             | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | Standard                         |                                                                                |                                   | Test Level / Note                                  |              |             |
|                                                                 |                              |             | Conducted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | BS EN/EN55032(CISPR32), CNS13438 |                                                                                |                                   | Class B                                            |              |             |
|                                                                 |                              |             | Radiated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | BS EN/EN55032(CISPR32), CNS13438 |                                                                                |                                   | Class B                                            |              |             |
|                                                                 |                              |             | Harmonic Current (Note 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | BS EN/EN61000-3-2                |                                                                                |                                   | Class A                                            |              |             |
|                                                                 |                              |             | Voltage Flicker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             | BS EN/EN61000-3-3                |                                                                                |                                   | -----                                              |              |             |
|                                                                 | EMC IMMUNITY                 |             | BS EN/EN55035, BS EN/EN61000-6-2, BS EN/EN61204-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 |                              |             | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | Standard                         |                                                                                |                                   | Test Level / Note                                  |              |             |
|                                                                 |                              |             | ESD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | BS EN/EN61000-4-2                |                                                                                |                                   | Level 3, 8KV air; Level 2, 4KV contact, criteria A |              |             |
|                                                                 |                              |             | Radiated Susceptibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | BS EN/EN61000-4-3                |                                                                                |                                   | Level 3, criteria A                                |              |             |
|                                                                 |                              |             | EFT/Burest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             | BS EN/EN61000-4-4                |                                                                                |                                   | Level 3, criteria A                                |              |             |
|                                                                 |                              |             | Surge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | BS EN/EN61000-4-5                |                                                                                |                                   | Level 4, 2KV/L-N, criteria A                       |              |             |
|                                                                 |                              |             | Conducted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | BS EN/EN61000-4-6                |                                                                                |                                   | Level 3, criteria A                                |              |             |
| Magnetic Field                                                  |                              |             | BS EN/EN61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                  | Level 4, criteria A                                                            |                                   |                                                    |              |             |
| Voltage Dips and interruptions                                  |                              |             | BS EN/EN61000-4-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                  | > 95% dip 0. 5 periods, 30% dip 25 periods,<br>> 95% interruptions 250 periods |                                   |                                                    |              |             |
| OTHERS                                                          | MTBF                         |             | 3271.9K hrs min. Telcordia SR-332 (Bellcore) ; 856.5K hrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | DIMENSION                    |             | 70*90*54.5mm (W*H*D)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                                  |                                                                                |                                   |                                                    |              |             |
|                                                                 | PACKING                      |             | 0.27Kg; 48pcs/13.74Kg/0.96CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                                  |                                                                                |                                   |                                                    |              |             |
| NOTE                                                            |                              |             | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.<br>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.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Harmonic current test at 90% load for HDR-100-xxN.<br>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."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>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).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |             |                                  |                                                                                |                                   |                                                    |              |             |

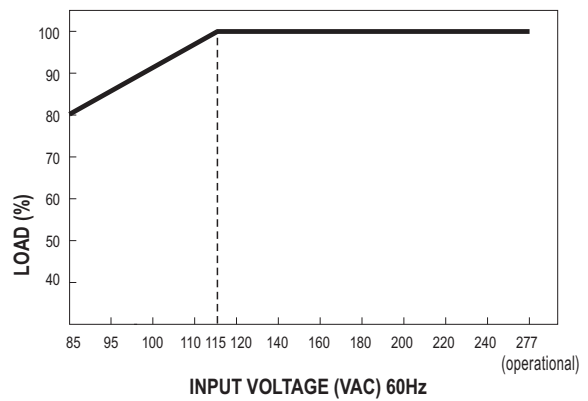
## Block Diagram



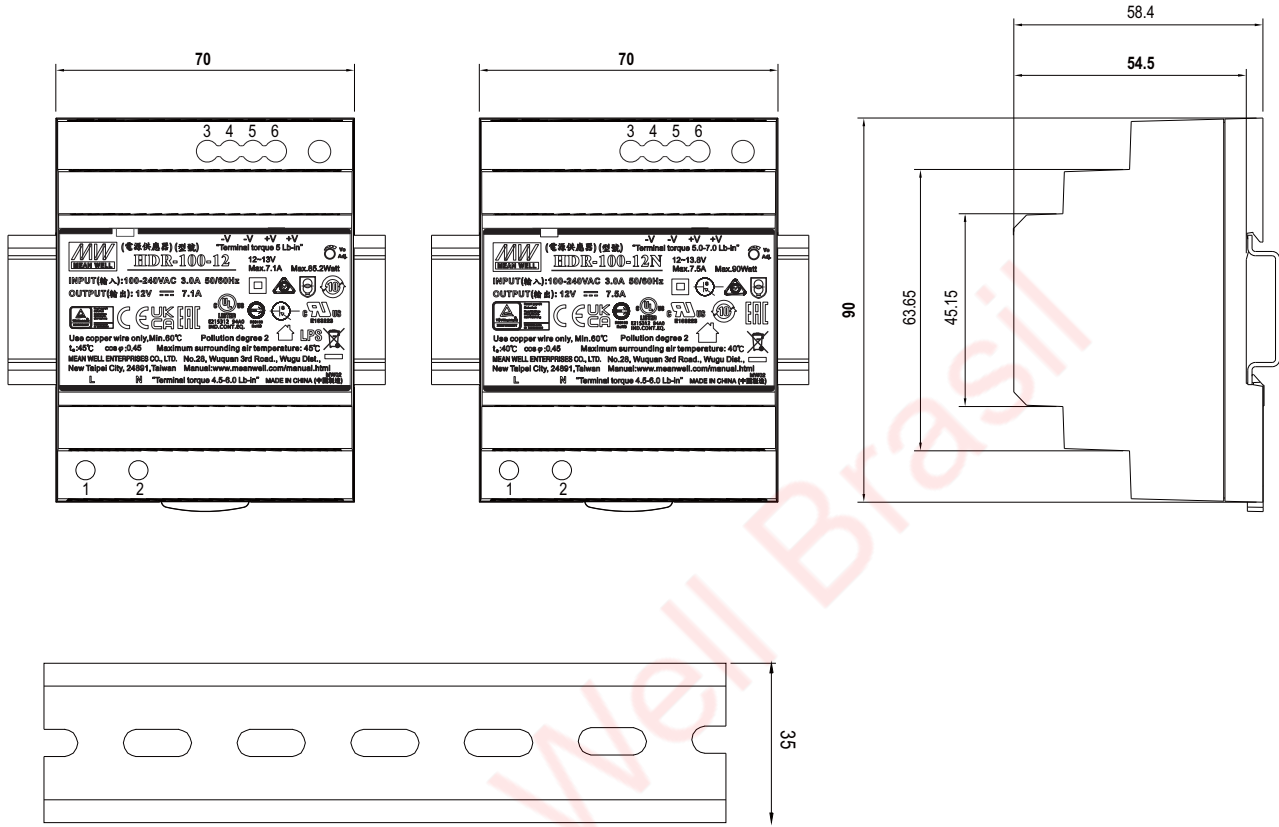
## Derating Curve VS Ambient Temperature



## Output Derating VS Input Voltage



## 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 | Pin No. | Assignment |
|---------|------------|---------|------------|
| 1       | AC/L       | 3,4     | -V         |
| 2       | AC/N       | 5,6     | +V         |

## Installation Manual

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