



User's Manual



## Features

- 2.06"x1.07" compact size
- Universal input 85~305VAC
- No load power consumption < 0.1W
- EMI Class B without additional components
- Wide operating temp. range -30~70°C
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Isolation Class II
- Pass LPS
- 3 years warranty

## Applications

- Industrial electrical equipment
- Mechanical equipment
- Factory automation equipment
- Hand-held electronic device

## GTIN CODE

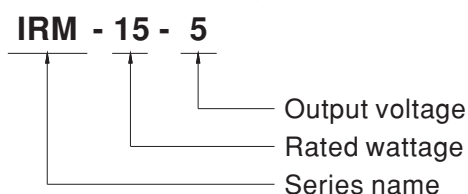
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## Description

IRM-15 is a 15W miniature (52.4\*27.2\*24mm) AC-DC module-type power supply, ready to be soldered onto the PCB boards of various kinds of electronic instruments or industrial automation equipments. This product allows the universal input voltage range of 85~305VAC. The 94V-0 flame retardant plastic case and potted with silicone enhance the heat dissipation and meet the anti-vibration demand up to 5G; moreover, it provides the fundamental resistance to dust and moisture.

With the high efficiency up to 83% and the extremely low no-load power consumption below 0.1W, IRM-15 series fulfills the worldwide regulation for the low power consumption requirement for electronics. The entire series is a Class II design (no FG pin), incorporating the built-in EMI filtering components, enabling the compliance with BS EN/EN55032 Class B; the supreme EMC features keep the end electronic units from electromagnetic interference.

## Model Encoding

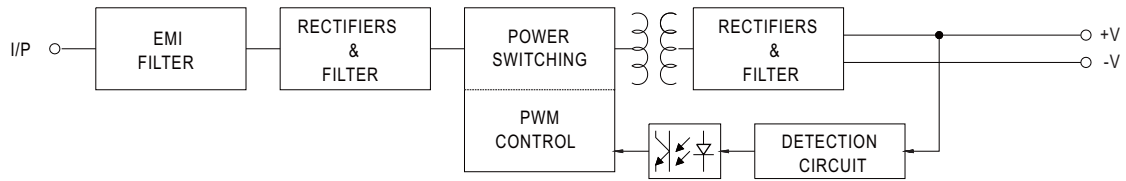


## SPECIFICATION

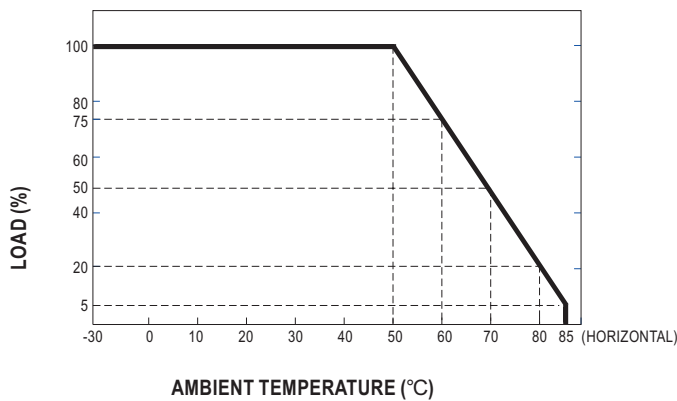
| MODEL                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IRM-15-3.3                                                                                    | IRM-15-5                                                                            | IRM-15-12    | IRM-15-15                                                                   | IRM-15-24    |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------|--------------|
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 11.55W                                                                                        | 15W                                                                                 | 15W          | 15W                                                                         | 15.12W       |
|                                | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 200mVp-p                                                                                      | 200mVp-p                                                                            | 200mVp-p     | 200mVp-p                                                                    | 200mVp-p     |
|                                | VOLTAGE TOLERANCE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±2.5%                                                                                         | ±2.5%                                                                               | ±2.5%        | ±2.5%                                                                       | ±2.5%        |
|                                | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ±0.5%                                                                                         | ±0.5%                                                                               | ±0.3%        | ±0.3%                                                                       | ±0.3%        |
|                                | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ±1%                                                                                           | ±1%                                                                                 | ±0.5%        | ±0.5%                                                                       | ±0.5%        |
|                                | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1000ms, 20ms/230VAC      1000ms, 20ms/115VAC at full load                                     |                                                                                     |              |                                                                             |              |
|                                | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 40ms/230VAC      10ms/115VAC at full load                                                     |                                                                                     |              |                                                                             |              |
| INPUT                          | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 85 ~ 305VAC      120 ~ 430VDC                                                                 |                                                                                     |              |                                                                             |              |
|                                | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 47 ~ 440Hz                                                                                    |                                                                                     |              |                                                                             |              |
|                                | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 74%                                                                                           | 78%                                                                                 | 82%          | 82%                                                                         | 83%          |
|                                | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.35A/115VAC      0.2A/230VAC      0.17A/277VAC                                               |                                                                                     |              |                                                                             |              |
|                                | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COLD START 20A/115VAC      40A/230VAC                                                         |                                                                                     |              |                                                                             |              |
|                                | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | < 0.25mA/277VAC                                                                               |                                                                                     |              |                                                                             |              |
| PROTECTION                     | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 115%~190% rated output power                                                                  |                                                                                     |              |                                                                             |              |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Protection type : Hiccup mode, recovers automatically after fault condition is removed        |                                                                                     |              |                                                                             |              |
|                                | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3.8 ~ 4.95V                                                                                   | 5.75 ~ 6.75V                                                                        | 13.8 ~ 16.2V | 17.25 ~ 20.25V                                                              | 27.6 ~ 32.4V |
| ENVIRONMENT                    | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -30 ~ +70℃ (Refer to "Derating Curve")                                                        |                                                                                     |              |                                                                             |              |
|                                | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20 ~ 90% RH non-condensing                                                                    |                                                                                     |              |                                                                             |              |
|                                | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -40 ~ +85℃, 10 ~ 95% RH                                                                       |                                                                                     |              |                                                                             |              |
|                                | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.03%/℃ (0 ~ 50℃)                                                                            |                                                                                     |              |                                                                             |              |
|                                | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes                       |                                                                                     |              |                                                                             |              |
|                                | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Wave soldering: 265℃,5s (max.); Manual soldering: 390℃,3s (max.)                              |                                                                                     |              |                                                                             |              |
|                                | OPERATING ALTITUDE <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2000 meters                                                                                   |                                                                                     |              |                                                                             |              |
|                                | SAFETY & EMC (Note.5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SAFETY STANDARDS                                                                              | IEC62368-1, UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004, BSMI CNS15598-1 approved |              |                                                                             |              |
| WITHSTAND VOLTAGE              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P:3KVAC                                                                                 |                                                                                     |              |                                                                             |              |
| ISOLATION RESISTANCE           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH                                                      |                                                                                     |              |                                                                             |              |
| EMC EMISSION                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Parameter                                                                                     | Standard                                                                            |              | Test Level / Note                                                           |              |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Conducted                                                                                     | BS EN/EN55032(CISPR32), CNS15936                                                    |              | Class B                                                                     |              |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Radiated                                                                                      | BS EN/EN55032(CISPR32), CNS15936                                                    |              | 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                                                    |              |                                                                             |              |
| 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, > 95% interruptions 250 periods |              |
| OTHERS                         | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10656.2K hrs min.      Telcordia SR-332 (Bellcore) ; 970.3K hrs min.      MIL-HDBK-217F (25℃) |                                                                                     |              |                                                                             |              |
|                                | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 52.4*27.2*24mm (L*W*H)                                                                        |                                                                                     |              |                                                                             |              |
|                                | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.05Kg/240pcs/13Kg/0.94CUFT                                                                   |                                                                                     |              |                                                                             |              |
| NOTE                           | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<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>※ 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

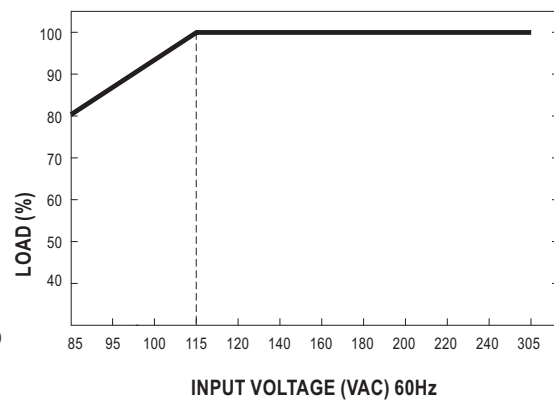
fosc : 65KHz



### ■ Derating Curve



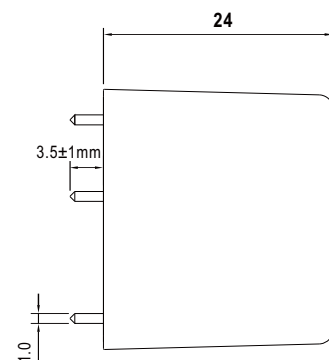
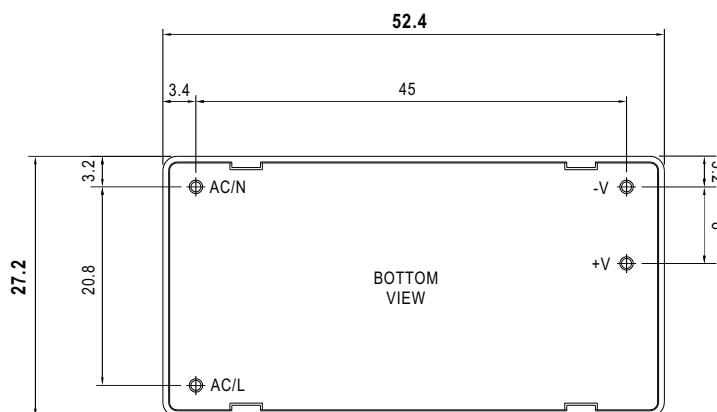
### ■ Output Derating VS Input Voltage



### ■ Mechanical Specification

(Unit:mm[inch], Tolerance:±0.5[±0.02])

Case No.219A



P/N diameter:1.0

### ■ Installation Manual

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