# Smart Solenoid Valve Control Module (PWM)

Model: PDK Series

## Product Features

- **Energy Efficient:** Significantly reduces power consumption.
- **Low Temperature Rise:** Lowers coil temperature by over 50% to extend lifespan.
- **Stable Performance:** Built-in temperature compensation for reliable operation.
- **Circuit Protection:** Integrated overcurrent fuse for enhanced safety.
- **Flexible Settings:** Adjustable holding current and PWM duty cycle.
- **Fast Response:** Suitable for high-frequency switching applications.
- **Certified Quality:** RoHS and CE compliant.

## Product Description

Compared with traditional constant-voltage driving methods, the PDK Series effectively reduces coil temperature rise, minimizing aging and component wear caused by heat. This helps extend solenoid valve lifespan and reduce maintenance frequency.

With lower power consumption, the PDK Series improves overall energy efficiency while delivering stable and reliable performance. Its strong anti-interference capability also makes it suitable for various industrial environments, especially applications requiring long operating hours or high-temperature operation.

## Product Applications

- Solenoid valves
- Valve Terminals
- Electronic locks
- Electromagnets
- Relays

## Product Functions

- Operating Voltage Range: 12/24VDC (-10% / +10%)
- Pulse Output Current: Max. 2500mA
- Continuous Output Current: Max. 1200mA
- Adjustable Energy-Saving Rate
- Adjustable Energy-Saving Activation Time: 175~999ms (+/-10%)
- Low Noise, No Magnetic Loss, Reduced Coil Temperature
- Operating Temperature: -20°C ~ 60°C

## Electrical Parameters

MIT D Type (24V, 0~60℃)

| Parameter | | Min | Max | Unit |
|---|---|---|---|---|
| Operating Voltage | 12V | 10.8 | 13.2 | V |
| | 24V | 21.6 | 26.4 | V |
| Maximum Pulse Current | | 0 | 2.5 | A |
| Maximum Continuous Current | | 0 | 0.2(24V), 0.4(12V) | A |
| Allowable Coil Resistance | | full range | | Ohm |
| Switching Time | | 175 | 999 | mS |
| Holding Power | 5W | 4500 | 5500 | mW |
| | 6W | 5400 | 6600 | |
| | 7W | 6300 | 7700 | |
| | 8W | 7200 | 8800 | |
| Operating Frequency | | 500 | | Hz |
| Duty Cycle | | 0~80 | | % |
| ESD Protection | | 4000 | | V |
| Operating Temperature | | -20 | 60 | ℃ |

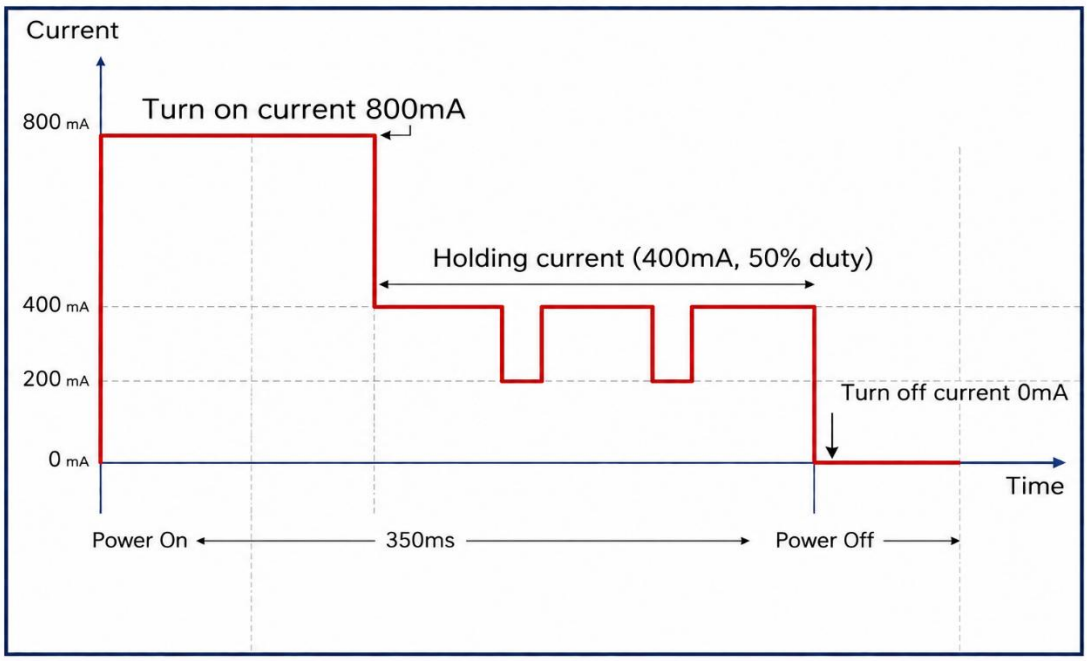
Note 1: If the above specifications do not meet your requirements, customized solutions can be developed according to your application needs.

Note 2: A fuse is installed on the power input side to protect against surge voltage and excessive current conditions.

Note 3: During engineering testing, a VR version is available to adjust the duty cycle 40–60% power saving ratio: (CW = current decrease), (CCW = current increase).

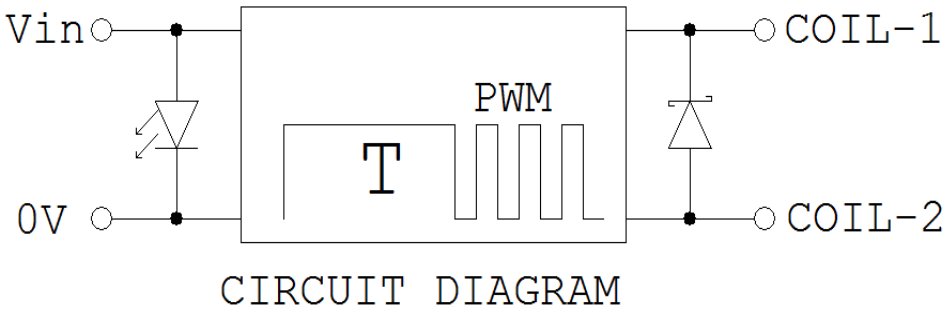
Note 4: Incorrect operation may cause malfunction/ damage, e.g., connecting a 24V supply to a 12V coil will result in burnout.

## Energy-Saving Mode Main Function




Topology Example (50% duty)

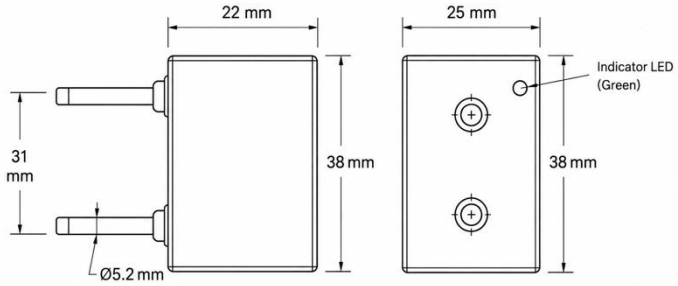
## Circuit Diagram Description




Surge Protection, LED x 1(power on)

## Module Dimensions

**Tolerance:** ±0.5 mm




| | |
|---|---|
| Dimensions | 38(L) * 25(W) * 22(T)mm |
| Cable Specifications | • Input Cable Length: 150 mm<br>• Output Cable Length: 300 mm<br>• Stripped Wire Length: 25 mm |
| Cable Standard | (UL2464-18AWG) |
| LED Indicator | Power ON LED: Green |
| Protection Rating | IP65 |

## Ordering Information

### PA-VV-WW-SS-PWM

**VV:** Input Voltage range [unit:V]

| **VV value** | **24** |
|---|---|
| Vcc min [ V ] | 21.6 |
| Vcc max [ V ] | 26.4 |

**WW**: Duty cycle [ % ]

| **WW value** | **30** | **40** | **50** |
|---|---|---|---|
| Duty Cycle [ % ] | 30 | 40 | 50 |

**SS:** Translate Time (second stage time)[unit:ms]

| **SS value** | **35** | **50** | **99** |
|---|---|---|---|
| Delay time | 350ms | 500ms | 999ms |

## User Notice

Product specifications shown herein are subject to change without prior notice.

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