Single-Phase / 3-Phase Digital Power Controllers

DPU Series

Features

- High speed and high accuracy by digital control using high speed CPU
- Various controls
  - Phase control, feedback control (constant voltage / constant current / constant power)
  - Zero crossing cycle control (fixed / variable cycles)
  - Zero crossing ON / OFF control
- Improved maintainability with built-in fast-acting fuse and easy fuse replacement
- Communication output model: RS485 (Modbus RTU)
- Various control inputs and DI inputs
  - Control input: analog (current, voltage), ON / OFF (voltage pulse, no voltage), communication (RS485), potentiometer
  - DI input: AUTO / MAN switching, RUN / STOP switching, Reset, output holding, SP designation (6 setting points can be customized)
- Various alarm output
  - Overcurrent, overvoltage, fuse break, heat sink overheat, device fault, heater break alarm (partial heater break detection)
- Improved convenience by separating operation part
- Applicable load
  - Supercantal, platinum, molybdenum, carbon, halogen lamps, chrome, nickel, etc.

View product detail

Specifications

Series	DPU1	DPU3
Control phase	Single-phase	3-phase
Rated frequency	50 / 60 Hz (auto recognition), allowable frequency range: ± 2 Hz	
Min. load current	1 A	
Output range	Phase control: 0 to 98 %, Z.C. control: 0 to 100 %	
Control method	• Phase control: normal / constant current feedback / constant voltage feedback / constant power feedback • Cycle control (Z.C.): fixed cycle / variable cycle [01] • ON / OFF control (Z.C.)	
Load	• Phase control: resistance load, inductive load • ON / OFF, cycle control : resistance load	
Phase control output accuracy	• Normal: within ± 10 % F.S. of rated load voltage • Constant voltage feedback: within ± 3 % F.S. of rated load voltage (within variable ± 10 % F.S. of rated voltage) • Constant current feedback: within ± 3 % F.S. of rated load current (within variable 1 to 10 times of rated resistance) • Constant power feedback: within ± 3 % F.S. of rated load power (within variable ± 10 % F.S. of rated power, within variable 1 to 10 times of rated resistance)	
Control input	• Auto : 4 - 20 mA / 0 - 20 mA / 0 - 5 VDC⎓ / 1 - 5 VDC⎓ / 0 - 10 VDC⎓ / voltage pulse (0 / 12 VDC⎓ (24 VDC⎓)) / non-voltage input (ON / OFF) / communication input (RS485) • Manual : internal 10 kΩ adjuster, external 3 to 10 kΩ adjuster (≥ 2 W)	
Digital input (DI)	AUTO / MAN selectable, RUN / STOP selectable, RESET, output holding, SP set (SP 1 to 6)	
Display type	Control input, load voltage, load current, load power, load resistance, power supply frequency	
Min. display output	Over 2.5 % of rated voltage / current	
Approval	CE EAC	

01) Only for single-phase

Power supply	110 / 220 / 380 / 440 VAC~ model (fan and control power 220 VACs~ 50 / 60 Hz separately)	
Allowable voltage range	Single-phase: 90 to 110 % of power supply 3-phase: 85 to 115 % of power supply	
Power consumption	Single-phase: ≤ 7 W (except fan power) 3-phase: ≤ 10 W (except fan power)	
Display method	• Display value and setting value display: 7 segment 4-digit • State display: Single-phase LED × 4, 3-phase LED ×6 • Display value percentage display: 11 LED bar	
Dielectric strength	Between input terminal and power terminal: 2000 VAC~ 50 / 60 Hz for 1 min	
Vibration	0.75 mm double amplitude at frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours	
Insulation resistance	≥ 200 MΩ (500 VDC⎓ megger)	
Noise immunity	±2 kV square wave noise (pulse width: 1 μs) by the noise simulator	
Ambient temp.	-10 to 50 °C, storage: -20 to 80 °C (no freezing or condensation)	
Ambient humidity	5 to 90 %RH, storage: 5 to 90 %RH (no freezing or condensation)	
Comm. protocol	Modbus RTU	

Unit weight (packaged)	Single-phase	3-phase
A	≈ 3.0 kg (≈ 3.2 kg)	≈ 6.5 kg (≈ 7.6 kg)
B	≈ 3.0 kg (≈ 5.6 kg)	≈ 11.5 kg (≈ 13.0 kg)
C	≈ 11.0 kg (≈ 12.1 kg)	≈ 20.0 kg (≈ 21.1 kg)
D	≈ 11.0 kg (≈ 19.3 kg)	≈ 30.8 kg (≈ 35.7 kg)