DINGS'

Precision Motion Specialist

MOTION CONTROLLER
PRODUCT INTRODUCTION

Standalone Stepper Electronics [OPEN LOOP type / CLOSED LOOP type]

Integrated Stepper Electronics [OPEN LOOP type / CLOSED LOOP type]

BLDC · VCM Control Solutions

Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

Standalone Stepper Electronics OPEN LOOP TYPE

- Pulse input for Open-loop 2-phase step motor drive
- Microstep resolution setting via DIP switches
- Output current setting via DIP switches
- Smooth filtering and soft-start function
- Protection alarm output

DS-OLS2-FPD

DS-OLS22-FPD

DS-OLS4-FPD

DS-OLS8-FPD

	DS-OLS2-FPD	DS-OLS22-FPD	DS-OLS4-FPD	DS-OLS8-FPD
POWER SUPPLY	24 – 36 VDC	12 – 48 VDC	24 – 48 VDC	24 - 72 VDC
OUTPUT RATED CURRENT (max)	2.2 A	3.0 A	4.2 A	7.8 A
INTERFACE	Step & Direction (1 pulse) or CW / CCW (2 pulse)			
INPUT / OUTPUT SIGNAL	3 differential inputs 1 differential output	3 differential inputs	3 differential inputs 2 digital outputs	3 differential inputs 1 digital output
SIZE · WEIGHT	86 × 55 × 20 mm · 90 g	92.5 × 56 × 21 mm · 96 g	118 × 75.5 × 25.5 mm · 250 g	118 × 78 × 34 mm · 300g

- Pulse input for Open-loop 5-phase step motor drive
- Microstep resolution setting via DIP switches
- Output current setting via DIP switches
- Protection alarm output

DS-OLF2-FPD

	DS-OLF2-FPD
POWER SUPPLY	24 - 36 VDC
OUTPUT RATED CURRENT (max)	2.4 A
INTERFACE	Step & Direction (1 pulse) or CW / CCW (2 pulse)
INPUT / OUTPUT SIGNAL	4 differential inputs 2 digital outputs
SIZE · WEIGHT	85 × 56 × 21 mm · 96 g

- RS-485 communication for Open-loop 2-phase step motor drive
- Support for up to 30-axis control via MODBUS-RTU
- Selectable command mode (Pulse / RS-485 communication)
- Parameter setting via DINGS' Tuner Pro GUI
- Microstep resolution up to 102,400
- Various error detection functions

DS-OLS7-FRS4

DS-OLS8-FRS4

	DS-OLS7-FRS4	DS-OLS8-FRS4
POWER SUPPLY	24 - 48 VDC	24 - 72 VDC
OUTPUT RATED CURRENT (max)	3.2 A	6.5 A
INTERFACE	PULSE (1/2 pulse) or RS-485 MODBUS-RTU	
INPUT / OUTPUT SIGNAL	2 differential inputs 1 digital output	3 differential inputs 1 digital output
SIZE · WEIGHT	94 × 60 × 27 mm · 175 g	118 × 78 × 34 mm · 300 g

- Analog input for Open-loop 2-phase step motor drive
- Internal operating speed setting via DIP switches

DS-OLS10-FSC

	DS-OLS10-FSC
POWER SUPPLY	24 - 48 VDC
OUTPUT RATED CURRENT (max)	4.5 A
INTERFACE	Analog speed command
INPUT / OUTPUT SIGNAL	3 digital inputs 1 analog input (0 - 10 VDC)
SIZE · WEIGHT	118 × 78 × 34 mm · 300 g

Standalone Stepper Electronics CLOSED LOOP TYPE

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- RS-485 communication for 2-/5-phase Closed-loop & 3-phase Open-loop step motors
- Support for up to 32 nodes via MODBUS-RTU
- Parameter setting via DINGS' Tuner Pro GUI
- Support for 2-/3-/5-phase step motors
- Selectable command mode (Pulse / RS-485)
- Built-in protection
  (Over current, Over/under voltage, Over temperature)

DS-CLF4-FRS4

POWER SUPPLY	24 – 36 VDC
OUTPUT RATED CURRENT (max)	4.0 A
INTERFACE	PULSE (1/2 pulse) or RS-485 MODBUS-RTU
INPUT / OUTPUT SIGNAL	2 differential inputs 5 digital inputs 3 digital outputs
SIZE · WEIGHT	92.5 × 56 × 21 mm · 175 g

- RS-485 communication for Closed-loop 2-phase step motor drive
- Support for up to 30-axis control via MODBUS-RTU
- Parameter setting via DINGS' Tuner Pro GUI
- DS-CLS10-FRS4-1A
  - Support for ABS encoder (BiSS-C, Single 16-bit / Multi 16-bit)
- DS-CLS9-FRS4-01
  - Dedicated drive with force control function
- Selectable command mode
  - Pulse / RS-485 communication

[Force Control]
DS-CLS9-FRS4-01

DS-CLS10-FRS4

[A=ABS Encoder / BiSS-C type]
DS-CLS10-FRS4-1A

POWER SUPPLY	24 – 48 VDC	24 – 72 VDC	
OUTPUT RATED CURRENT (max)	4.5 A	6.0 A	6.5 A
INTERFACE	PULSE (1/2 pulse) or RS-485 MODBUS-RTU		
INPUT / OUTPUT SIGNAL	2 differential inputs 5 digital inputs 4 digital outputs 3 encoder signal inputs (differential) 3 encoder signal outputs (differential)	2 differential inputs 5 digital inputs 3 digital outputs 1 brake output 3 encoder signal inputs (differential) 3 encoder signal outputs (differential)	2 differential inputs 5 digital inputs 3 digital outputs 1 brake output
SIZE · WEIGHT	134 × 77 × 34 mm · 350 g	156 × 97 × 33.5 mm · 376 g	156 × 97 × 33.5 mm · 500 g

- PWM constant-current bipolar microstepping drive
- Support for CANopen (PP, PV, HM) and EtherCAT (PP, PV, HM, CSP, CSV) control modes
- Built-in protection (Short circuit, Under/over voltage, Over current)
- Compact design with low noise and vibration
- Optically isolated inputs

DS-CLS9-FCAO

DS-CLS9-FETC

POWER SUPPLY	24 - 48 VDC	
OUTPUT RATED CURRENT (max)	6.5 A	
INTERFACE	CANopen	EtherCAT
INPUT / OUTPUT SIGNAL	2 differential inputs 5 digital inputs 3 digital outputs 1 brake output 3 encoder signal inputs (differential) 3 encoder signal outputs (differential)	
SIZE · WEIGHT	156 × 97 × 33.5 mm · 500 g	

- Support for 2-phase step motors with an ABS encoder
- EtherCAT communication (PP, PV, HM, CSP, CSV)
- ABS encoder (BiSS-C), no homing required
- Built-in STO (Safe Torque Off) function
- Touch-Probe input

DS-CLS9-FETC-1A

POWER SUPPLY	24 - 48 VDC
OUTPUT RATED CURRENT (max)	6.5 A
INTERFACE	EtherCAT
INPUT / OUTPUT SIGNAL	1 Touch-Probe input 3 digital inputs 1 digital output 1 brake output 1 ABS encoder input (BiSS-C)
SIZE · WEIGHT	134 × 77 × 34 mm · 311 g

Standalone Stepper Electronics CLOSED LOOP TYPE

- Support for up to 2-axis control
- Support for EtherCAT communication (PP, PV, HM, CSP, CSV)
- Built-in protection (Short circuit, Under/over voltage, Over current)
- Support for ABS encoder (BiSS-C, 16-bit / 16-bit multi-turn)
- Compact design with low noise and vibration
- Optically isolated inputs

[I=INC Encoder]
DS-CLS9-FETC-2I

[A=ABS Encoder / BiSS-C type]
DS-CLS9-FETC-2A

POWER SUPPLY	24 – 48 VDC
OUTPUT RATED CURRENT (max)	6.5 A
INTERFACE	EtherCAT
INPUT / OUTPUT SIGNAL	4 digital inputs x 2 2 digital outputs x 2 1 brake output x 2
SIZE · WEIGHT	156 × 97 × 34 mm · 500 g

- Support for up to 4-axis control
- Support for EtherCAT communication
- Support for PP, PV, PT, HM, CSP, CSV control modes
- Support for 2-/3-/5-phase Open-loop & Closed-loop step motors
- Built-in protection (Short circuit, Under/over voltage, Over current)
- Compact design with low noise and vibration
- Optically isolated inputs

DS-CLS3-FETC-4I

POWER SUPPLY	24 – 36 VDC
OUTPUT RATED CURRENT (max)	3.0 A
INTERFACE	EtherCAT
INPUT / OUTPUT SIGNAL	3 digital inputs 2 digital outputs
SIZE · WEIGHT	144 × 106 × 31 mm · 450 g

BLDC · VCM Control Solutions

- RS-485 MODBUS-RTU drive for BLDC & Voice coil motors
- Built-in protection (Over/under voltage, Over current, Over temperature)
- BLDC type (DS-OLBD1-FRS4, DS-OLBD3-FRS4)
  - Hall sensor-based FOC algorithm with dual-loop PID speed and current control
  - Hall signal fault protection
  - Max. continuous current: 6 A / 10 A
- VCM type (DS-OLBV1-FRS4, DS-CLBV1-FRS4)
  - DS-OLBV1: Frequency control via 0–5 V analog voltage input
  - DS-CLBV1: Closed-loop position control with analog feedback and multi-step positioning

[BLDC Control]
DS-OLBD1-FRS4

[BLDC Control]
DS-OLBD3-FRS4

[VCM Control]
DS-OLBV1-FRS4

[VCM Control]
DS-CLBV1-FRS4

POWER SUPPLY	12 – 48 VDC		18 - 52 VDC	24 - 48 VDC
OUTPUT RATED CURRENT (max)	6 A (Peak 18 A)	10 A (Peak 30 A)	6 A (Peak 18 A)	4.5 A
INTERFACE	RS-485 MODBUS-RTU / Analog speed input (0–5V)		RS-485 MODBUS-RTU / Analog frequency input	PULSE / RS-485 MODBUS-RTU / Analog position sensor input (0-5 V)
INPUT / OUTPUT SIGNAL		3 digital inputs 2 digital outputs 1 analog input		7 digital inputs 4 digital outputs 1 analog input
SIZE · WEIGHT	118 × 75.5 × 25.5 mm · 200 g	118 × 77 × 34 mm · 300 g	118 × 75.5 × 25.5 mm · 300 g	134 × 77 × 34 mm · 325 g

Integrated Stepper Electronics OPEN LOOP TYPE

- Integrated Open-loop 2-phase step motor drive
- Support for Pulse input, RS-485 MODBUS-RTU, and CANopen
- Support for 42 mm step motors, hollow shaft motors, and all DINGS' linear actuators (E, N, C, K)
- Parameter setting via DINGS' Tuner Pro GUI

DS-OL42-IPD/IRS4

DS-OL42-ICAO

POWER SUPPLY	24 – 36 VDC	
OUTPUT RATED CURRENT (max)	3.0 A	
INTERFACE	Pulse input RS-485 MODBUS-RTU	CANopen
INPUT / OUTPUT SIGNAL	2 differential inputs 2 digital inputs 1 digital output	4 digital inputs 1 digital output
SIZE · WEIGHT	42.2 × 42.2 × 25.2 mm · 60 g	

- Integrated Open-loop 2-phase step motor drive
- Support for Pulse input, RS-485 MODBUS-RTU, CANopen, and analog speed input
- Support for 57 mm step motors, hollow shaft motors, and all DINGS' linear actuators (E, N, C, K)
- Parameter setting via DINGS' Tuner Pro GUI

DS-OL57-IPD/IRS4

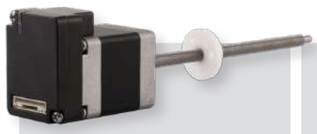
DS-OL57-ICAO

DS-OL57-ISC

POWER SUPPLY	24 – 48 VDC		
OUTPUT RATED CURRENT (max)	5.6 A		
INTERFACE	Pulse input RS-485 MODBUS-RTU	CANopen	Analog speed command
INPUT / OUTPUT SIGNAL	2 differential inputs 2 digital inputs 1 digital output	4 digital inputs 1 digital output	3 digital inputs 1 analog input
SIZE	56.2 × 56.2 × 25.4 mm		

Integrated Stepper Electronics CLOSED LOOP TYPE

- Integrated Closed-loop 2-phase step motor drive
- Support for RS-485 MODBUS-RTU
- Support for step motors and DINGS' external-type linear actuators
- Support for four homing methods (Origin sensor, Z-phase output, Limit sensor, Torque homing)
- Parameter setting via Ezi-Motion GUI
- 64-position table function



DS-CL28-IPD/IRS4

DS-CL28-SA

DS-CL42-SA

POWER SUPPLY	24 VDC		
OUTPUT RATED CURRENT (max)	1.5 A	1.0 A	1.2 A
INTERFACE	Pulse input RS-485 MODBUS-RTU	RS-485 MODBUS-RTU	
INPUT / OUTPUT SIGNAL	3 digital inputs 1 digital output	4 digital inputs	7 digital inputs 3 digital outputs

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