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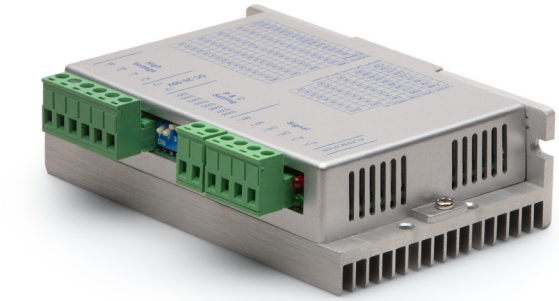

STEPPING MOTOR DRIVERS | 2 - 8 A

DSH-SERIES

We offer a broad range of high quality stepping motor drivers in standard and customized configurations. Our customer-centric approach makes us the ideal supplier for your project, especially to instrument and apparatus builders. In addition, we offer immediate delivery, thanks to always having a high number of motors in stock.

Customizations include:

- ✓ Customized harness
- ✓ Winding configuration
- ✓ Shaft configuration
- ✓ And more...

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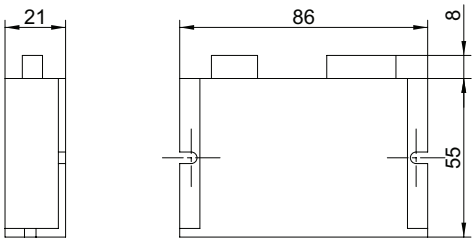
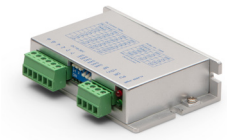
DSH-160 | STEPPING MOTOR DRIVER

DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

DSH	–	NOMINAL CURRENT

Example: DSH-160

OPTIONS POWER SUPPLIES

STEPPING MOTOR DRIVER DATA		
Model		DSH-160
Nominal current	A	1.6
Max. current	A	2.2
Weight	kg	0.10
IP rating		IP20
Operating temperature	°C	0 to 50

SWITCH	DESCRIPTION	ON SETTING	OFF SETTING
SW4	Full and half current	Full current always	Half current when pulse time ≥ 200 ms

PIN NAME	DEFINITION	FUNCTION	
PU	Pulse signal[1]	High driver input clock pulses | +5 V	Low driver input clock pulses | 0 V (GND)
DR	Motor direction signal	CW rotational direction | +5 V	CCW rotational direction | 0 V (GND)
+5V	Control signal positive power		
MF	Motor enable signal	Enable rotation | +5 V	Disable rotation | 0 V (GND)
A- | A+ | B- | B+	Motor phases connection		
V+ | V-	Power supply	18 - 36 VDC | GND	

CURRENT LIMIT SWITCH SETTINGS

Nominal current	A	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6
Max. current	A	0.3	0.5	0.7	1.0	1.3	1.6	1.9	2.2
SW1		ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2		ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3		ON	ON	ON	ON	OFF	OFF	OFF	OFF

MICRO-STEP SWITCH SETTINGS

Micro-step/step	1	8	16	32
PUL/REV	200	1.6K	3.2K	6.4K
SW5	ON	OFF	ON	OFF
SW6	ON	ON	OFF	OFF

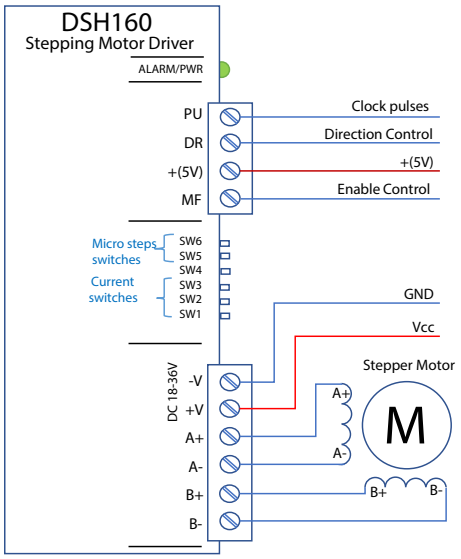
ALARM/PWR LED INDICATORS

Green LED on	Power on
Green LED flashes	Fault detection

NOTES

1. Maximum pulse frequency 200 kHz.

DIAGRAM



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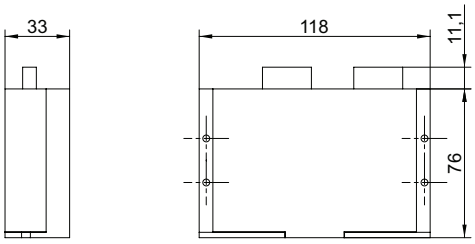
DSH-300 | STEPPING MOTOR DRIVER

DRAWING (mm)



PHOTO

MODEL NO. DESIGNATION

DSH	–	NOMINAL CURRENT

Example: DSH-300

CAUTION! For signal voltages over **5 V** (pins DIR+, PUL+ and MF+), only use current **15 mA** or lower due to risk of overheating that may damage the driver.

OPTIONS POWER SUPPLIES

STEPPING MOTOR DRIVER DATA		
Model		DSH-300
Nominal current	A	3
Max. current	A	4.2
Weight	kg	0.25
IP rating		IP20
Operating temperature	°C	0 to 50

SWITCH	DESCRIPTION	ON SETTING	OFF SETTING
SW4	Full and half current	Full current always	Half current when pulse time ≥ 200 ms

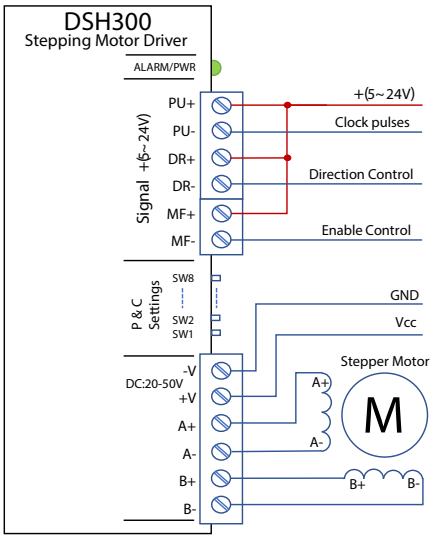
PIN NAME	DEFINITION	FUNCTION	
DR-	Motor direction signal[2]	CW rotational direction | +5 V	CCW rotational direction | 0 V (GND)
DR+	Motor direction Vcc	Enable direction control | +5 V	-
PU-	Pulse signal[1,2]	High driver input clock pulses | +5 V	Low driver input clock pulses | 0 V (GND)
PU+	Pulse Vcc	Enable clock pulses | +5 V	-
MF-	Motor enable signal[2]	Enable rotation | +5 V	Disable rotation | 0 V (GND)
MF+	Motor enable Vcc	Enable the enable operation | +5 V	-
A- | A+ | B- | B+	Motor phases connection	-	-
V+ | V-	Power supply	20 - 50 VDC | GND	

CAUTION! For signal voltages over **5 V** (pins DIR+, PUL+ and MF+), only use current **15 mA** or lower due to risk of overheating that may damage the driver.

CURRENT LIMIT SWITCH SETTINGS									
Nominal current	A	0.7	1.0	1.4	1.7	2 .0	2.4	2.7	3
Max. current	A	1.0	1.5	1.9	2. 4	2. 8	3. 3	3. 8	4. 2
SW1		ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2		ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3		ON	ON	ON	ON	OFF	OFF	OFF	OFF

MICRO-STEP SWITCH SETTINGS															
Micro-step/step	2	4	8	16	32	64	128	5	10	20	25	40	50	100	200
PUL/REV	400	800	1.6K	3.2K	6.4K	13K	26K	1K	2K	4K	5K	8K	10K	20K	40K
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

DIAGRAM



ALARM/PWR LED INDICATORS

Green LED on	Power on
Green LED flashes	Fault detection

NOTES

1. Maximum pulse frequency 200 kHz.
2. For signal voltages over **5 V** (pins DIR+, PUL+ and MF+), only use current **15 mA** or lower due to risk of overheating that may damage the driver.

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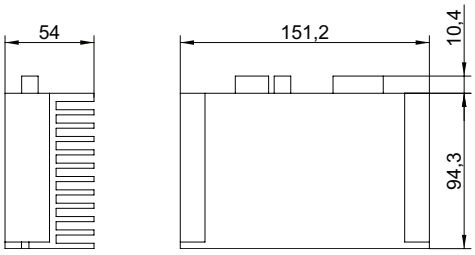
DSH-600 | STEPPING MOTOR DRIVER

DRAWING (mm)



PHOTO

MODEL NO. DESIGNATION

DSH	–	NOMINAL CURRENT

Example: DSH-600

OPTIONS POWER SUPPLIES

STEPPING MOTOR DRIVER DATA		
Model		DSH-600
Nominal current	A	6
Max. current	A	7.2
Weight	kg	0.6
IP rating		IP20
Operating temperature	°C	0 to 50

SWITCH	DESCRIPTION	ON SETTING	OFF SETTING
SW4	Full and half current	Full current always	Half current when pulse time ≥ 200 ms
SW9	Pulse Smoothing	Smooth acceleration and deceleration	Regular acceleration and deceleration
SW10	N/A	N/A	N/A
SW11	Pulse filter	Enabled low pass filter ≤ 400 Hz	Enabled low pass filter ≤ 100 Hz
SW12	N/A	N/A	N/A
SW13	Pulse mode not supported	Always off	Always off
SW14	Self-test	Self-test mode[1]	Normal connection

PIN NAME	DEFINITION	FUNCTION	
DIR-	Motor direction signal	CW rotational direction | +5 V	CCW rotational direction | 0 V (GND)
DIR+	Motor direction Vcc	Enable direction control | +5 V	-
PUL-	Pulse signal[2]	High driver input clock pulses | +5 V	Low driver input clock pulses | 0 V (GND)
PUL+	Pulse Vcc	Enable clock pulses | +5 V	-
MF-	Motor enable signal	Enable rotation | +5 V	Disable rotation | 0 V (GND)
MF+	Motor enable Vcc	Enable the enable operation | +5 V	-
A- | A+ | B- | B+	Motor phases connection	-	-
DC | AC	Power supply	24 - 110 VDC polarity any	18 - 80 VAC

CURRENT LIMIT SWITCH SETTINGS

Nominal current	A	2	2.6	3.1	3.7	4.3	4.9	5.4	6
Max. current	A	2.4	3.1	3.8	4.5	5.1	5.8	6.5	7.2
SW1		ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2		ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3		ON	ON	ON	ON	OFF	OFF	OFF	OFF

MICRO-STEP SWITCH SETTINGS

Micro-step/step	2	4	8	16	32	64	128	5	10	20	25	40	50	100	200
PUL/REV	400	800	1.6K	3.2K	6.4K	13K	26K	1K	2K	4K	5K	8K	10K	20K	40K
SW5	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

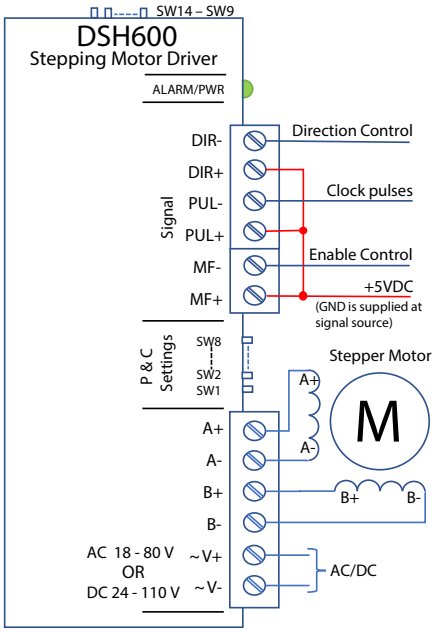
ALARM/PWR LED INDICATORS

Green LED on	Motor disabled
Green LED flashes	Motor enabled
Red LED 2 flashes | 3 seconds	Undervoltage
Red LED 3 flashes | 3 seconds	Overvoltage
Red LED 4 flashes | 3 seconds	Overcurrent

NOTES

1. Connect only driver and power to motor. Motor should run by internal pulses at 5 kHz.
2. Maximum pulse frequency 200 kHz.

DIAGRAM



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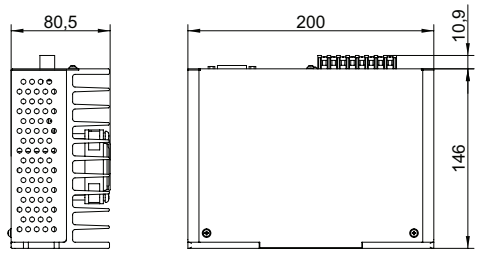
DSH-800 | STEPPING MOTOR DRIVER

DRAWING (mm)



PHOTO

MODEL NO. DESIGNATION

DSH	–	NOMINAL CURRENT

Example: DSH-800

CAUTION! Input voltage must not exceed **220 V**.

OPTIONS POWER SUPPLIES

STEPPING MOTOR DRIVER DATA		
Model		DSH-800
Nominal current	A	8
Max. current	A	11
Weight	kg	0.8
IP rating		IP20
Operating temperature	°C	0 to 50

SWITCH	DESCRIPTION	ON SETTING	OFF SETTING
SW9	Standby current setting 20% ~ 80%	N/A	N/A
SW10	Standby current setting 20% ~ 80%	N/A	N/A
SW11	Motor selection	86 mm	110 mm or 130 mm
SW12	Pulse smoothing	Forbid	Enable
SW13	Pulse filter	Enabled low pass filter ≤ 400 Hz	Enabled low pass filter ≤ 100 Hz
SW14	MF Function selection	Off pulse	Off current
SW15	Pulse mode	CW/CCW pulse	Pulse/direction
SW16	Self-test pulse 4.5 kHz	Enable	Forbid

PIN NAME	DEFINITION	FUNCTION	
DIR-	Motor direction signal	SW15 = ON CW pulse signal[3]	SW15 = OFF, it is direction control signal[4]
DIR+ 24V/5V	Input signal + (24 V or 5 V)	Connect to 24 V or 5 V power supply	-
PUL-	Pulse signal[2]	SW15 = ON, it is CW pulse signal[3]	SW15 = OFF, it is pulse signal[5]
PUL+ 24V/5V	Input signal + (24 V or 5 V)	Connect to 24 V or 5 V power supply	-
MF-	Motor free signal	When effective (low level), the motor coil current is turned off and motor free	
MF+ 24V/5V	Input signal + (24 V or 5 V)	Connect to 24 V or 5 V power supply	-
FL+	Fault output signal +	Connect to the output current limiting resistor	-
FL-	Fault output signal -	Connect to the output GND, maximum drive current 50 mA	Maxium voltage 50 V
TM+/TM-	Home output signal +/-	TM+ connect with the resistor Maximum drive current 50 mA	TM- connect to output GND. Maximum voltage 50 V.
A- | A+ | B- | B+	Motor phases connection	-	-
L | N	Power supply	110 - 220 V	-

CAUTION! Input voltage must not not exceed **220 V**.

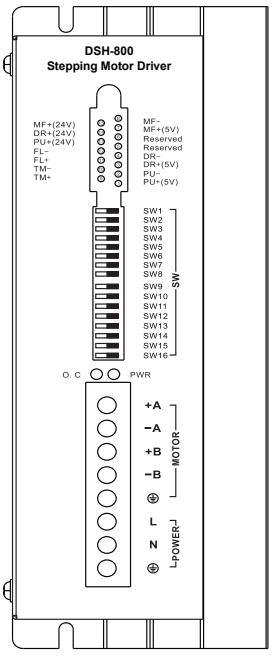
CURRENT LIMIT SWITCH SETTINGS

Nominal current	A	1	1.5	2	2.5	3	3.3	3.6	4	4.3	4.6	5	5.3	5.6	6	7	8
Max. current	A	1.4	2.1	2.8	3.5	4.2	4.6	5.0	5.6	6.0	6.4	7.0	7.4	7.8	8.4	9.8	11
SW1		ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW2		ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW3		ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW4		ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

MICRO-STEP SWITCH SETTINGS

Micro-step/step	1	2	4	8	16	32	64	128	5	10	20	25	40	50	100	125
PUL/REV	200	400	800	1.6K	3.2K	6.4K	13K	26K	1K	2K	4K	5K	8K	10K	20K	25K
SW5	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW6	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW7	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW8	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

DIAGRAM



ALARM/PWR LED INDICATORS

Green LED on	Motor free
Green LED flashes	Motor enabled
Red LED 2 flashes | 3 seconds	Undervoltage
Red LED 3 flashes | 3 seconds	Overvoltage
Red LED 4 flashes | 3 seconds	Overcurrent

NOTES

1. Connect only driver and power to motor. Motor should run by internal pulses at 5 kHz.
2. Maximum pulse frequency 400 kHz.
3. Effects on falling edge, the motor moves a step when pulse goes from high to low It requires: When connect with 5 V PU+, low level 0 ~ 0.5 V, high level 4 ~ 5 V; when connect with 24 V PU+, low level 0 ~ 0.5 V, high level 20 ~ 24 V. Pulse width >2.5 μs.
4. Used to change motor direction. It requires: When connect with 5 V PU+, low level 0 ~ 0.5 V, high level 4 ~ 5 V when connect with 24 V PU+, low level 0 ~ 0.5 V, high level 20 ~ 24 V.
5. Effective edge can be selected by DP14 in pulse/direction control mode

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