

# MSD 50D Microstepping Driver

- Compact size using ASIC and SMT Technology
- 24 - 75 Vdc Rated Supply Input
- 0.625 - 5 Arms Rated Phase Current, Up to 7.1 Amps Peak
- Optically Isolated STEP, DIRECTION and ENABLE inputs
- Up to 2 MHz STEP Frequency Input
- Microstep resolutions up to 51,200 s/rev with 1.8 Degree Motors
- Idle Current Reduction (ICR) reduces current under no command
- Single and Double Shaft (Encoder Ready) Motor Configurations



## Drive Performance

Catalog Number	Voltage Range Vdc	Current Rating		Switch Freq kHz	Steps per revolution (1.8 Degree Two Phase Motor)	Weight	
		RMS Ic	Peak Ip			Kg	Lb
MSD50D	+24 to 75	0.625 to 5	0.625 to 7.1	20	200, 400, 800, 1k, 1600, 2k, 3.2k, 5k, 6.4k, 10k, 12.8k, 25k, 25.6k, 50k & 51.2k	0.454	1.00

Holding Torque 2 Phases On Th - Minimum		Current Rated / ph Iph Amps DC	Phase Connection Types	Motor Inertia Jm		Motor Diameter		Motor Length Lm		Motor Weight W		Motor Catalog Number Shaft Configuration		Drive Catalog Number
Ncm	oz-in			g-cm <sup>2</sup>	oz-in-s <sup>2</sup>	mm	inch	mm	inch	kg	lb	Double	Single	
17	24	1.5	4 lead	18	0.00025	42	1.66	34	1.34	0.2	0.44	IS 17 007	IS 17 003	MSD 50D
24	34	0.8	Parallel Series	55	0.00078	42	1.66	39	1.54	0.3	0.57	IS 17 009	IS 17 016	MSD 50D
34	48	0.6												
31	44	1.0	4 lead	32	0.00045	42	1.66	43	1.69	0.3	0.66	IS 17 005	IS 17 018	MSD 50D
55	78	1.1	Parallel Series	68	0.00096	42	1.66	47	1.85	0.3	0.73	IS 17 011	IS 17 020	MSD 50D
55	78	0.6												
54	76	1.4	Parallel Series	77	0.00109	56	2.20	41	1.61	0.5	1.10	IH 23 008	IH 23 001	MSD 50D
54	76	0.7												
54	76	2.2	4 lead	77	0.00109	56	2.20	41	1.61	0.5	1.10	IH 23 009	IH 23 002	MSD 50D
111	157	1.4	Parallel Series	220	0.00312	56	2.20	55	2.17	0.7	1.54	IH 23 010	IH 23 003	MSD 50D
111	157	0.7												
111	157	4.2	Parallel Series	220	0.00312	56	2.20	55	2.17	0.7	1.54	IH 23 012	IH 23005	MSD 50D
111	157	2.1												
182	258	2.1	4 lead	340	0.00482	56	2.20	77	3.03	1.0	2.20	IH 23 013	IH 23006	MSD 50D
182	258	4.2	Parallel Series	340	0.00482	56	2.20	77	3.03	1.0	2.20	IH 23 014	IH 23 007	MSD 50D
182	258	2.1												
319	452	2.0	Parallel Series	660	0.00935	86	3.39	67	2.64	1.7	3.75	IH 34 108	IH 34 101	MSD 50D
319	452	1.0												
319	452	4.0	Parallel Series	660	0.00935	86	3.39	67	2.64	1.7	3.75	IH 34 109	IH 34 102	MSD 50D
319	452	2.0												
319	452	3.0	Series	660	0.00935	86	3.39	67	2.64	1.7	3.75	IH 34 110	IH 34 103	MSD 50D
538	762	4.0	Parallel Series	1200	0.01699	86	3.39	94	3.70	2.5	5.51	IH 34 111	IH 34 104	MSD 50D
538	762	2.0												
538	762	3.0	Series	1200	0.01699	86	3.39	94	3.70	2.5	5.51	IH 34 112	IH 34 105	MSD 50D
920	1303	4.9	Parallel Series	1800	0.02549	86	3.39	126	4.94	3.8	8.27	IH 34 113	IH 34 106	MSD 50D
920	1303	2.5												
920	1303	4.5	Series	1800	0.02549	86	3.39	126	4.94	3.8	8.27	IH 34 114	IH 34 107	MSD 50D

Notes: Visit [www.mcg-net.com](http://www.mcg-net.com) for more individual CAD drawings & data Warning: Maximum Bus Voltage for the IS17 is 48 Vdc

The MSD 50D is an economical and compact size microstepping driver for use with MCG Step Motors. These Drives require an unregulated DC power supply. These Models interface with typical Indexers.

### Protection / Diagnostics

- Thermal
- Phase to Phase
- Fault Output
- Phase to ground
- Voltage to Phase
- Internal power supply under-voltage

### Adjustments

- 15 microstep resolutions, dip switch selectable both in decimal and binary
- Step filter response (digital filter to reduce noise on the step input)
- Adjustable output current (per phase) via dip switch setting (fixed 0.625 amp increments)
- Adjustable idle current reduction time response(0.05, 0.1 or 1.0 sec). Automatically reduces idle currents at dwell
- Enable Sense Control can be changed via a jumper setting

### General Features

- No minimum motor inductance required
- Single power supply
- Built in Mid-range instability circuit (electronic damping) to maintain torque at high speeds

Other Drive Choices are Available (see pages) - MSD25C p.29, MSD30C p.31, MSO60D p.35, MSD70D p.37, MSD80L p.39