

HVAC Drives



Lenze AC Tech MCH Series Price Book
May 2015 - US Dollars

Lenze
AC Tech

MCH Series Drives: Model Number Designation Code

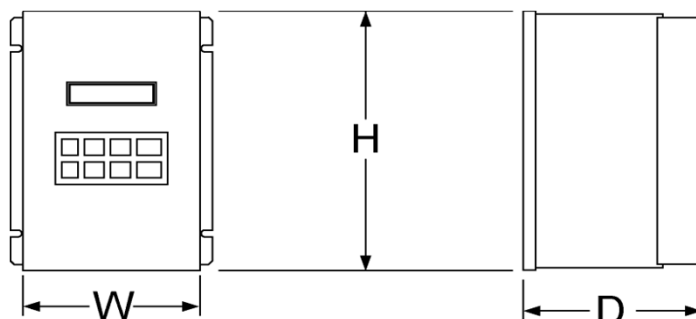
The MCH Series drives are rated for variable torque applications, typically centrifugal fans, blowers and pumps.

The model number for the MCH Series fully describes the entire product specified. Standard options are shown below and on the following pages.

MCH Series drives are built in a variety of enclosures with or without pre-wired options. Most options are contained in an enclosure below the drive and assembled as a unit. All customer wiring is contained within this enclosure eliminating the need to remove the drive cover.

	MH	4	20	B	T	G	13567
Series:							
MH = MCH Variable Torque Series							
Input Voltage:							
2 = 240/200 VAC (For 208, 230, and 240 Vac; 50 or 60 Hz)							
4 = 480/400 VAC (For 380, 415, 440, 460 and 480 Vac; 50 or 60 Hz)							
5 = 590/480 VAC (For 440, 460, 480, 575 and 600 Vac; 50 or 60 Hz)							
Power Rating:							
10 = 1 HP	100 = 10 HP	400 = 40 HP	1250 = 125 HP				
20 = 2 HP	150 = 15 HP	500 = 50 HP	1500 = 150 HP				
30 = 3 HP	200 = 20 HP	600 = 60 HP	2000 = 200 HP				
50, 51 = 5 HP	250 = 25 HP	750 = 75 HP	2500 = 250 HP				
75 = 7.5 HP	300 = 30 HP	1000 = 100 HP					
Enclosure Type:							
B = NEMA 1 General Purpose, vented							
D = NEMA 12 Oil-tight and Dust-tight							
C = NEMA 4 Watertight							
Communication Protocol Options:							
T = Metasys N2 (Johnson Building Systems)							
N = BACnet MS/TP							
M = Siemens P1 (Apogee)							
Blank = Modbus RTU (Standard)							
Construction:							
F = Option Box (for non-bypass options)							
G = Bypass Option & Enclosure							
H = Additional Form-C relay board (for basic drive only)							
Blank = Basic MCH Series Drive only							
Options: Applicable options are combined lowest number to highest in model number suffix							
	Option Box (F134)	Bypass (G13567)					
Door interlocked Input Disconnect ²	X	X					
Line Reactor	X	X					
VFD Fuses ²	X	X					
Motor Bypass Fuses ²	n/a	X					
24VDC Power Supply & 3rd Relay	n/a	X					
Auto/Manual Bypass transfer logic	n/a	X					

MCH Series Basic Drive



240 / 208 Volt Models¹

240V 208V				NEMA 1 Enclosed					NEMA 4 & 12 Enclosed				
Amps ¹	Amps ¹	HP	kW	Model Number	List Price (US\$)	Dimensions (in)			Model Number	List Price (US\$)	Dimensions (in)		
						H	W	D			H	W	D
4.0	4.6	1	0.75	MH210B	809	7.50	4.70	4.33	MH210C	1,003	7.88	6.12	4.35
6.8	7.8	2	1.5	MH220B	893	7.50	6.12	5.12	MH220C	1,105	7.88	7.86	4.90
9.6	11.0	3	2.2	MH230B	951	7.50	6.12	5.12	MH230C	1,172	7.88	7.86	5.90
15.2	17.5	5	3.7	MH250B	1,305	7.88	7.86	5.94	MH250C	1,616	9.75	10.26	7.20
22	25	7.5	5.5	MH275B	1,693	9.38	7.86	6.84	MH275C	2,031	11.75	10.26	8.35
28	32	10	7.5	MH2100B	2,168	11.25	7.86	6.84	MH2100C	2,560	13.75	10.26	8.35
42	48	15	11	MH2150B	2,746	12.75	7.86	6.84	MH2150C	3,174	15.75	10.26	8.35
54	62	20	15	MH2200B	3,636	12.75	10.26	7.74	MH2200D ⁶	4,072	15.75	10.26	8.35
68	78	25	18.5	MH2250B	4,558	15.75	10.26	8.35	MH2250D ⁶	5,517	20.25	10.26	8.35
80	92	30	22	MH2300B	5,287	15.75	10.26	8.35	MH2300D ⁶	5,845	20.25	10.26	8.35

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating.

⁶ Models with "D" suffix are NEMA type 12 only.

Additional Form-C Relay Board

(Option H)

HP	240/208V	480/400V	590V
1 - 5	71	71	71
7.5 - 30	112	112	112
40 - 60	N/A	112	112
75 - 250	N/A	Std.	Std.

NOTE:

For 230V models through 30HP and 480-590V models through 60HP, the basic drive has one relay output and two open-collector solid state outputs. To add another Form-C relay to the base drive, specify this option by adding an "H" to the base drive model number. Above this power range (where indicated as "Std."), two relay outputs are provided as standard.

Example: MH4150BH (this number cannot be followed by any other option numbers).

MCH Series Basic Drive

400 / 480 Volt Models¹

480V Amps ¹	400V Amps ¹	HP	kW	NEMA 1 Enclosed						NEMA 4 & 12 Enclosed					
				Model Number	List Price (US\$)	Dimensions (in) H W D			Model Number	List Price (US\$)	Dimensions (in) H W D				
2.0	2.3	1	0.75	MH410B	941	7.50	4.70	3.63	MH410C	1,125	7.88	6.12	4.35		
3.4	3.9	2	1.5	MH420B	1,050	7.50	6.12	4.22	MH420C	1,267	7.88	7.86	4.90		
4.8	5.5	3	2.2	MH430B	1,163	7.50	6.12	5.12	MH430C	1,377	7.88	7.86	4.90		
7.6	8.7	5	3.7	MH450B	1,395	7.50	6.12	5.12	MH450C	1,608	7.88	7.86	5.90		
14	16	10	7.5	MH4100B	2,351	9.38	7.86	6.84	MH4100C	2,716	11.75	10.26	8.35		
21	24	15	11	MH4150B	2,867	11.25	7.86	6.84	MH4150C	3,270	13.75	10.26	8.35		
27	31	20	15	MH4200B	3,636	12.75	7.86	6.84	MH4200C	4,072	15.75	10.26	8.35		
34	39	25	18.5	MH4250B	4,335	12.75	10.26	7.74	MH4250D ⁶	4,829	15.75	10.26	8.35		
40	49	30	22	MH4300B	4,761	12.75	10.26	7.74	MH4300D ⁶	5,265	15.75	10.26	8.35		
52	60	40	30	MH4400B	5,459	15.75	10.26	8.35	MH4400D ⁶	6,035	20.25	10.26	8.35		
65	75	50	37	MH4500B	6,585	19.75	10.26	8.55	MH4500D ⁶	7,005	21.00	13.72	8.35		
77	88	60	45	MH4600B	7,414	19.75	10.26	8.55	MH4600D ⁶	7,888	21.00	13.72	8.35		
96	96	75	55	MH4750B ⁴	10,057	29.00	16.64	11.85	MH4750D ⁶	11,069	37.00	18.00	13.30		
124	124	100	75	MH41000B ⁴	11,454	29.00	16.64	11.85	MH41000D ⁶	12,770	39.00	26.00	13.30		
156	156	125	90	MH41250B ⁴	14,138	29.00	24.42	11.85	MH41250D ⁶	15,455	39.00	26.00	13.30		
180	180	150	110	MH41500B ⁴	16,183	29.00	24.42	11.85							
240	240	200	150	MH42000B ⁴	22,179	29.00	36.66	11.85							
300	300	250	185	MH42500B ⁴	27,382	29.00	36.66	11.85							

590 Volt Models¹

Amps ¹	HP	kW	NEMA 1 Enclosed						NEMA 4 & 12 Enclosed					
			Model Number	List Price (US\$)	Dimensions (in) H W D			Model Number	List Price (US\$)	Dimensions (in) H W D				
1.6	1	0.75	MH510B	1,062	7.50	4.70	3.63	MH510C	1,242	7.88	6.12	4.35		
2.7	2	1.5	MH520B	1,162	7.50	6.12	4.22	MH520C	1,374	7.88	7.86	4.90		
3.9	3	2.2	MH530B	1,296	7.50	6.12	5.12	MH530C	1,508	7.88	7.86	4.90		
6.1	5	3.7	MH551B	1,530	7.88	7.86	5.94	MH550C	1,742	7.88	7.86	5.90		
9	7.5	5.5	MH575B	2,003	9.38	7.86	6.25	MH575C	2,323	9.75	10.26	7.20		
11	10	7.5	MH5100B	2,686	9.38	7.86	7.40	MH5100C	3,045	11.75	10.26	8.35		
17	15	11	MH5150B	3,284	12.75	7.86	6.84	MH5150C	3,676	13.75	10.26	8.35		
22	20	15	MH5200B	4,043	12.75	7.86	7.40	MH5200C	4,474	15.75	10.26	8.35		
27	25	18.5	MH5250B	4,851	12.75	10.26	7.74	MH5250D ⁶	5,340	15.75	10.26	8.35		
32	30	22	MH5300B	5,358	12.75	10.26	8.25	MH5300D ⁶	5,853	15.75	10.26	8.35		
41	40	30	MH5400B	6,068	15.75	10.26	8.35	MH5400D ⁶	6,708	20.25	10.26	8.35		
52	50	37	MH5500B	7,363	19.75	10.26	8.55	MH5500D ⁶	7,833	21.00	13.72	8.35		
62	60	45	MH5600B	8,234	19.75	10.26	8.55	MH5600D ⁶	8,761	21.00	13.72	8.35		

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating.

⁴ 75 - 250HP, 480V basic models include Input line reactor, order the "Basic Model" where noted.

⁶ Models with "D" suffix are NEMA type 12 only.

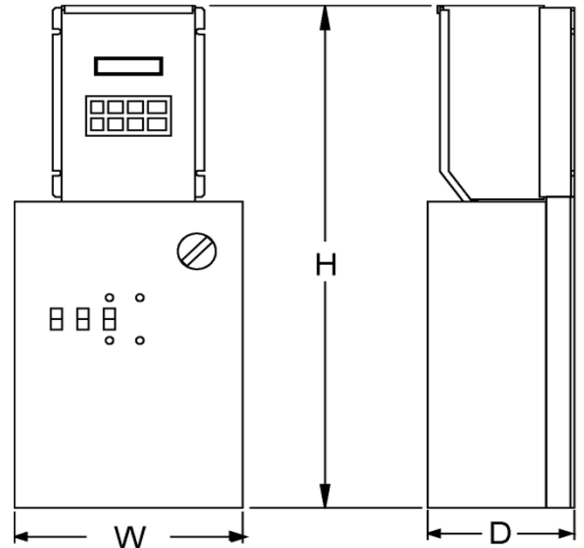
MCH Series Standard NEMA 1 Bypass Packages

MCH Series with Standard Bypass

The MCH Series Drives can be easily specified with 3-contactor bypass plus other options. The bypass and options are mounted in an enclosure below the drive and prewired. All customer wiring is done within the Bypass enclosure.

Standard features are:

- » Input Line Disconnect with Motor Fuses
- » 3-contactor Auto/Manual Transfer Bypass
- » Class 10 Thermal Overload Relay
- » VFD Input Fuses
- » 120 VAC Control Transformer with fused primary
- » Control I/O circuit board with terminal block mounted in the bypass enclosure. Offers larger terminals for standard drive inputs and outputs. Three logic outputs are form-C relays. Includes 24 volt power supply.
- » Door Mounted Selector Switches:
 - Hand-Off-Auto
 - Drive Mode - Off - Bypass Mode
 - Drive Normal - Off - Drive Test
- » Door Mounted Pilot Light Indication:
 - Power On
 - Drive Mode
 - Bypass Mode
 - Safety Circuit Fault
- » Installed Line Reactor



MCH Bypass Dimensions (in.)

Size	H	W	D	Size	H	W	D
B1	25.2	11.8	8.3	B7	40.5	16.3	10.8
B2	30.6	13.8	10.0	B9	48.5	18.3	12.2
B3	32.1	13.8	10.0	B10	52.5	18.3	12.2
B4	34.0	13.8	10.0	B12	59.5	24.3	11.9
B5	35.5	13.8	10.0	B13	69.5	36.3	13.2
B6	37.5	16.3	10.8	B14	80.0	50.0	15.2

240 / 208 Volt Models¹

Output Amps ¹	HP	kW	Model Number	Size	List Price (US\$)
6.8	2	1.5	MH220BG13567	B1	2,980
9.6	3	2.2	MH230BG13567	B1	3,040
15.2	5	3.7	MH250BG13567	B2	3,446
22	7.5	5.5	MH275BG13567	B3	4,020
28	10	7.5	MH2100BG13567	B4	4,687
42	15	11	MH2150BG13567	B5	5,483
54	20	15	MH2200BG13567	B6	7,317
68	25	18.5	MH2250BG13567	B9	9,260
80	30	22	MH2300BG13567	B9	10,421

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating. 208V motors may require the next size drive for Bypass and Option Box configurations due to component ratings.

MCH Series Standard NEMA 1 Bypass Packages

480 Volt Models¹

Output			Model		List Price
Amps ¹	HP	kW	Number	Size	(US\$)
3.4	2	1.5	MH420BG13567	B1	3,096
4.8	3	2.2	MH430BG13567	B1	3,208
7.6	5	3.7	MH450BG13567	B1	3,472
14	10	7.5	MH4100BG13567	B3	4,608
21	15	11	MH4150BG13567	B4	5,240
27	20	15	MH4200BG13567	B5	6,437
34	25	18.5	MH4250BG13567	B6	7,361
40	30	22	MH4300BG13567	B6	7,892
52	40	30	MH4400BG13567	B7	9,127
65	50	37	MH4500BG13567	B10	11,398
77	60	45	MH4600BG13567	B10	12,737
96	75	55	MH4750BG13567	B12	17,275
124	100	75	MH41000BG13567	B12	20,144
156	125	90	MH41250BG13567	B13	27,043
180	150	110	MH41500BG13567	B13	32,157
240	200	150	MH42000BG13567	B14	51,605
300	250	185	MH42500BG13567	B14	60,631

590 Volt Models¹

Output			Model		List Price
Amps ¹	HP	kW	Number	Size	(US\$)
2.7	2	1.5	MH520BG13567	B1	3,205
3.9	3	2.2	MH530BG13567	B1	3,340
6.1	5	3.7	MH551BG13567	B2	3,610
9	7.5	5.5	MH575BG13567	B3	4,217
11	10	7.5	MH5100BG13567	B3	5,030
17	15	11	MH5150BG13567	B5	5,626
22	20	15	MH5200BG13567	B5	6,563
27	25	18.5	MH5250BG13567	B6	7,725
32	30	22	MH5300BG13567	B6	8,447
41	40	30	MH5400BG13567	B7	9,237
52	50	37	MH5500BG13567	B10	11,311
62	60	45	MH5600BG13567	B10	13,401

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating. 208V motors may require the next size drive for Bypass and Option Box configurations due to component ratings.

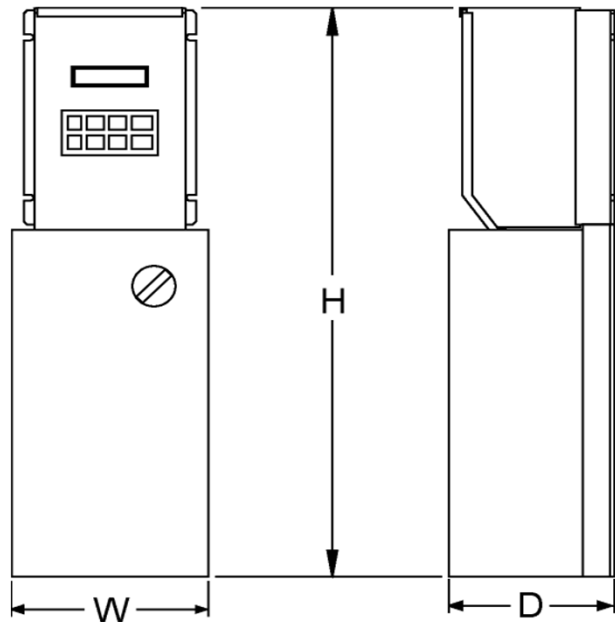
MCH Series NEMA 1 Option Box Packages

MCH Series with Option Box

The MCH Series Drives can be specified with an Option Box, which is an electrical enclosure mounted below the electronic drive. Options specified in the model number will be mounted and wired within this enclosure. All customer wiring is done within the Option Box.

Standard features are:

- » AC Line Terminals
- » Power Terminals for output to motor.
- » Control I/O circuit board with terminal block mounted in the enclosure. Offers larger terminals for standard drive inputs and outputs.
- » VFD input fuses
- » Installed Line Reactor
- » Input Disconnect



MCH Option Box Dimensions (in.)

Size	H	W	D	Size	H	W	D
A1	25.2	8.3	8.3	A7	40.5	12.4	10.8
A2	30.6	10.0	10.0	A9	48.5	12.4	12.2
A3	32.1	10.0	10.0	A10	52.5	12.4	12.2
A4	34.0	10.0	10.0	A12	59.9	19.6	13.2
A5	35.5	10.0	10.0	A13	59.9	27.4	13.2
A6	37.5	12.4	10.8	A14	59.9	39.6	13.2

240 / 208 Volt Models¹

Output			Model		List Price
Amps ¹	HP	kW	Number	Size	(US\$)
6.8	2	1.5	MH220BF134	A1	2,059
9.6	3	2.2	MH230BF134	A1	2,117
15.2	5	3.7	MH250BF134	A2	2,584
22	7.5	5.5	MH275BF134	A3	3,037
28	10	7.5	MH2100BF134	A4	3,631
42	15	11	MH2150BF134	A5	4,273
54	20	15	MH2200BF134	A6	5,419
68	25	18.5	MH2250BF134	A9	6,707
80	30	22	MH2300BF134	A9	7,560

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating. 208V motors may require the next size drive for Bypass and Option Box configurations due to component ratings.

MCH Series NEMA 1 Option Box

480 Volt Models¹

Output			Model		List Price (US\$)
Amps ¹	HP	kW	Number	Size	
3.4	2	1.5	MH420BF134	A1	2,134
4.8	3	2.2	MH430BF134	A1	2,248
7.6	5	3.7	MH450BF134	A1	2,512
14	10	7.5	MH4100BF134	A3	3,711
21	15	11	MH4150BF134	A4	4,228
27	20	15	MH4200BF134	A5	5,302
34	25	18.5	MH4250BF134	A6	6,001
40	30	22	MH4300BF134	A6	6,473
52	40	30	MH4400BF134	A7	7,430
65	50	37	MH4500BF134	A10	9,066
77	60	45	MH4600BF134	A10	10,186
96	75	55	MH4750BF134	A12	13,104
124	100	75	MH41000BF134	A12	14,757
156	125	90	MH41250BF134	A13	18,023
180	150	110	MH41500BF134	A13	21,031
240	200	150	MH42000BF134	A14	28,535
300	250	185	MH42500BF134	A14	33,740

590 Volt Models¹

Output			Model		List Price (US\$)
Amps ¹	HP	kW	Number	Size	
2.7	2	1.5	MH520BF134	A1	2,245
3.9	3	2.2	MH530BF134	A1	2,379
6.1	5	3.7	MH551BF134	A2	2,763
9	7.5	5.5	MH575BF134	A3	3,236
11	10	7.5	MH5100BF134	A3	4,047
17	15	11	MH5150BF134	A5	4,642
22	20	15	MH5200BF134	A5	5,549
27	25	18.5	MH5250BF134	A6	6,516
32	30	22	MH5300BF134	A6	7,070
41	40	30	MH5400BF134	A7	7,863
52	50	37	MH5500BF134	A10	9,619
62	60	45	MH5600BF134	A10	10,885

¹ Drive selection must be based upon motor nameplate FLA which must be less than or equal to the drive Output Current (Amps) rating. 208V motors may require the next size drive for Bypass and Option Box configurations due to component ratings.

MCH Serial Communication Protocols

The MCH Series Drives have serial communications capability. If the protocol is not specified at the time of order, it will ship with Modbus-RTU protocol.

Other protocols can be ordered, but must be specified at the time of order both in the model number and in your description of the product.

Serial Communications Protocols

Protocol	Specify by:	List Price (US\$)
Modbus RTU	Standard, do not modify the model number	0
Metasys N2	Place a "T" following the enclosure designation*	0
BACnet MS/TP	Place a "N" following the enclosure designation*	0
Siemens P1	Place a "M" following the enclosure designation*	0

*See "MCH Series Model Number Designation Code" on page 2

Conformal Coating Option

Conformal coating puts all circuit boards through a secondary process where a thin coat of varnish is applied over the surface of the board providing additional protection against contaminants such as dust and humidity that could create a short circuit across surface elements.

Conformal Coating of Circuit Boards

Description	Specify by:	List Price (US\$)
Basic Drives	Add "-CC" after the model number	30
Bypass or Option Box	Add "-CC" after the model number	62