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# Range Overview

## HD1 & HD2

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# HD1 Series

*HD1*



# HD1 - Specifications

Range up to 500kW (670HP)

*3ph 200/240V 50/60Hz 0.75-55kW*

*3ph 380/460V 50/60Hz 1.5-500kW*

*3ph 575/600V 50/60Hz 18.5-110kW*

- Dual Rated for HD & ND Applications
- Up to 150% Starting Torque
- Torque Vector Control
- High Speed Processor
- BLDC Motor Control
- 2 Motor Parameter Sets
- IP20 (Full Range)

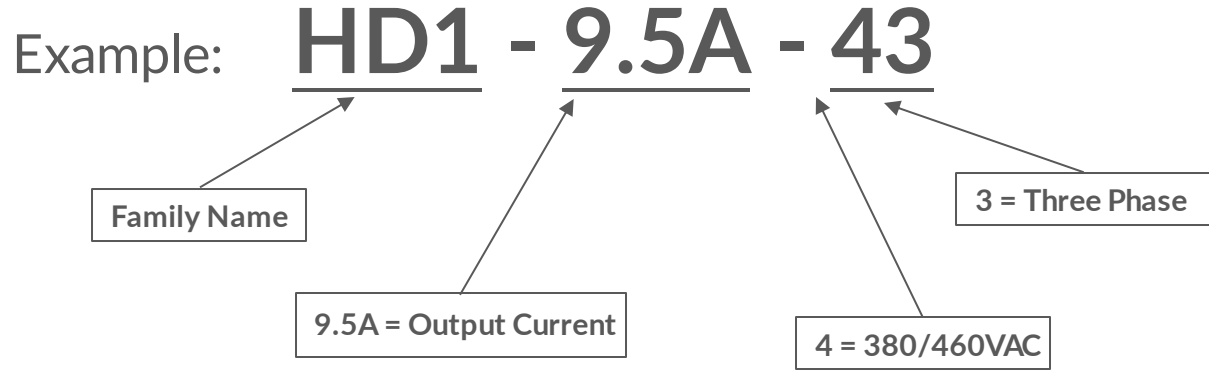


## HD1 - Additional Features

- Modbus RTU/RS485 built-in
- PID Control as standard
- Integral brake chopper (<30kW)
- Motor auto-tune (static & dynamic)
- DC injection braking
- Flux braking
- Detachable keypad with copy function
- Integral AC reactor from 220kW



# HD1 - Part Numbering



# HD1 - Rating Selection Tables

Model	HD Mode (150% Overload - 1 min)				NO Mode (120% Overload - 1 min)			
	Rated Power kW (HP)	Carrier Frequency (kHz)	Rated Input Current (A)	Rated Output Current (A)	Rated Power kW (HP)	Carrier Frequency (kHz)	Rated Input Current (A)	Rated Output Current (A)
HD1-3.7A-43	1.5 (2)	8	5	3.7	-	-	-	-
HD1-5A-43	2.2 (3)	8	5.8	5	-	-	-	-
HD1-6.5A-43	4 (5.5)	8	13.5	9.5	5.5 (7.5)	4	19.5	14
HD1-14A-43	5.5 (7.5)	8	19.5	14	7.5 (10)	4	25	18.5
HD1-18.5A-43	7.5 (10)	8	25	18.5	11 (15)	4	32	25
HD1-25A-43	11 (15)	8	32	25	15 (20)	4	40	32
HD1-32A-43	15 (20)	4	40	32	18.5 (25)	2	47	36
HD1-38A-43	18.5 (25)	4	47	38	22 (30)	2	56	45
HD1-45A-43	22 (30)	4	56	45	30 (40)	2	70	60
HD1-60A-43	30 (40)	4	70	60	37 (50)	2	80	75
HD1-75A-43	37 (50)	4	80	75	45 (60)	2	94	82
HD1-82A-43	45 (60)	4	84	82	55 (75)	2	128	115
HD1-115A-43	55 (75)	4	128	115	75 (90)	2	160	150
HD1-150A-43	75 (90)	2	160	150	90 (120)	2	190	180
HD1-180A-43	90 (120)	2	190	180	110 (150)	2	225	215
HD1-215A-43	110 (150)	2	225	215	132 (175)	2	265	260
HD1-260A-43	132 (175)	2	265	260	160 (215)	2	310	305
HD1-305A-43	160 (215)	2	310	305	185 (250)	2	345	340
HD1-340A-43	185 (250)	2	345	340	200 (270)	2	385	380
HD1-380A-43	200 (270)	2	385	380	220 (300)	2	430	425
HD1-425A-43	220 (300)	2	430	425	250 (335)	2	485	480
HD1-480A-43	250 (335)	2	485	480	280 (375)	2	545	530
HD1-530A-43	280 (375)	2	545	530	315 (420)	2	610	600
HD1-600A-43	315 (420)	2	610	600	350 (470)	2	625	650
HD1-650A-43	350 (470)	2	625	650	400 (535)	2	715	720
HD1-720A-43	400 (535)	2	715	720	500 (670)	2	890	860
HD1-800A-43	500 (670)	2	890	860	-	-	-	-

Model	Output Power kW (HP)	Carrier Frequency (kHz)	Input Current (A)	Rated Output Current (A)
HD1-4.5A-23	0.75 (1)	2	5	4.5
HD1-7A-23	1.5 (2)	2	7.7	7
HD1-10A-23	2.2 (3)	2	11	10
HD1-16A-23	4 (5.5)	2	17	16
HD1-20A-23	5.5 (7.5)	2	21	20
HD1-30A-23	7.5 (10)	2	31	30
HD1-42A-23	11 (15)	2	43	42
HD1-55A-23	15 (20)	2	56	55
HD1-70A-23	18.5 (25)	2	71	70
HD1-80A-23	22 (30)	2	81	80
HD1-110A-23	30 (40)	2	112	110
HD1-130A-23	37 (50)	2	132	130
HD1-160A-23	45 (60)	2	163	160
HD1-200A-23	55 (75)	2	200	200

Model	Output Power kW (HP)	Carrier Frequency (kHz)	Input Current (A)	Rated Output Current (A)
HD1-27A-63	18.5 (25)	4	35	27
HD1-35A-63	22 (30)	4	40	35
HD1-45A-63	30 (40)	4	47	45
HD1-52A-63	37 (50)	4	52	52
HD1-62A-63	45 (60)	4	65	62
HD1-86A-63	55 (75)	4	85	86
HD1-98A-63	75 (90)	2	95	98
HD1-120A-63	90 (125)	2	118	120
HD1-150A-63	110 (150)	2	146	150

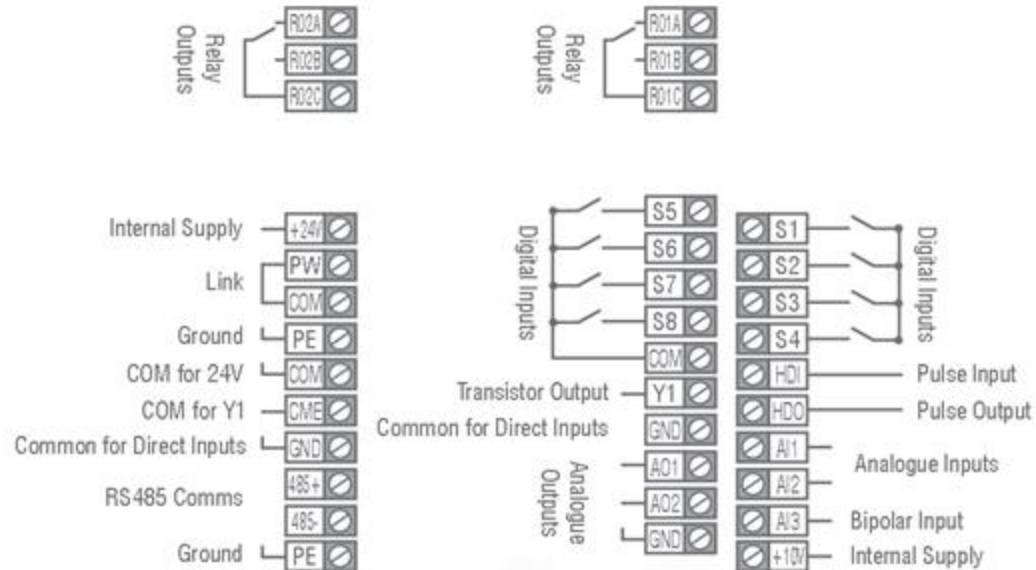


# HD1 - Terminal Controls

Category	Number	Character
Digital Inputs	8	Supports NPN & PNP
High Speed Pulse Input	1	Max. Frequency: 50kHz
Analogue Input	3	2x (AI1, AI2) 0~10V/0~20mA and 1x (AI3) -10~10V
High Speed Pulse Output	1	Max. Frequency: 50kHz
Digital Output	1	Max. Frequency: 10kHz
Analogue Output	2	0~10V / 0~20mA
Relay Output	2	250VAC/3A, 30VDC/1A



# HD1 - Terminal Layout





## HD2 - Options & Accessories

- Profibus DP Option Card
- CANopen Option Card
- Profinet Option Card
- Advanced LCD Keypad
- Braking units >30kW



**HD1-KP-LED**  
(Supplied with drive)



**HD1-KP-LCD**  
(Optional)

# HD1 - Quality & Approvals

- Integral C3 filter
- C1 & C2 filter options
- TUV
- UL/cUL
- CE marked
- 2 year warranty



# HD1 - Summary

Range from 1.5kw to 500kW

*3ph 240V 0.75-55kW (4.5~200A)*

*3ph 460V 1.5-500kW (3.7~860A)*

*3ph 600V 18.5-110kW (27~150A)*

- Dual Rated for HD & ND Applications
- Suitable for BMS systems
- Torque Vector Control
- High Speed Processor
- BLDC Motor Control
- Integral C3 filter for all models
- Modbus RTU/RS485 built-in
- Profinet, CANopen & Profibus DP
- Built-in braking unit (<30kW)
- Integral AC reactor from 220kW
- 9 digital inputs (inc. HDI terminal)
- UL/cUL for full range





# HD1 - Q & A

[HD1 Datasheet](#)



# HD2 Series

*HD2*



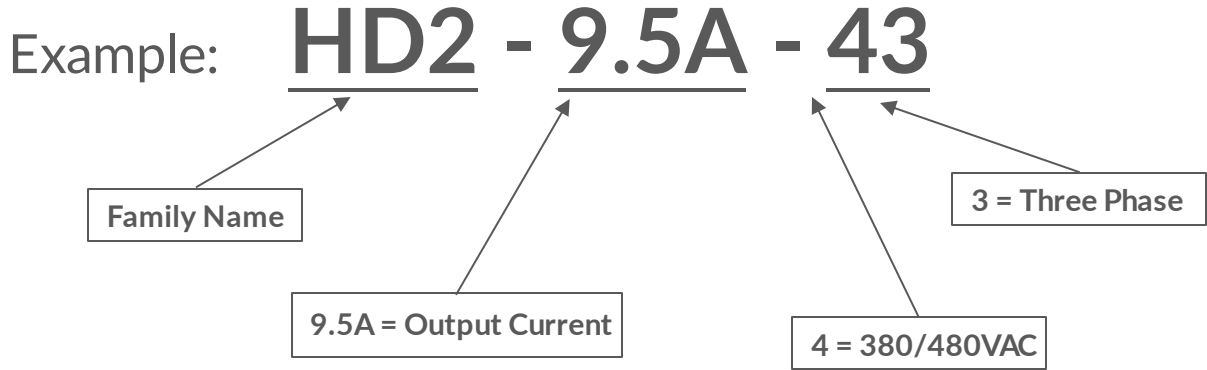
# HD2 - Specifications

*3ph 380/460V 50/60Hz 1.5-500kW*

- Heavy duty rated for demanding applications
- Closed loop vector (200% torque)
- Asynchronous & synchronous motor control
- 2 channel STO (SIL 2)
- Multi-function LCD keypad
- Integral brake chopper  $\leq 37\text{kW}$
- Integral AC reactor  $\geq 315\text{kW}$
- Integral DC reactor 18.5~110kW
- IP20 (full range inc. floor mounted)



# HD2 - Part Numbering



## HD2 - Keypad

- Full backlit LCD screen with up to 16 lines of text
- Graphical display
- Customisable display
- Intuitive menu with parameter information displayed



Text Display



Graphical Display



## HD2 - Options & Accessories

- Profibus DP Option Card
- CANopen Option Card
- Profinet Option Card
- Ethernet IP Option Card
- EtherCAT Option Card
- Modbus TCP Option Card
- PLC Option Card (CODESYS)
- Bluetooth Option Card
- WiFi Option Card
- PG Option Cards
- Multi I/O Card
- Braking Units >37kW



# HD2 - Terminal Layout



Terminal	Description
R01A / R02A	Relay Output N/O
R01B / R02B	Relay Output N/C
R01C / R02C	Relay Output Common
PE	Ground
PW	Input for external 24VDC supply
+24V	+24V for digital inputs
+10V	+10V for analog inputs
COM	0V common for digital inputs
CME	0V common for digital output
GND	0V common for analog input
H1	STO input 1
H2	STO input 2
S1 - S4	Digital input
HD1A / HD1B	Digital input / pulse input
AI1 / AI2	Analog input
AO1	Analog output
Y1	Digital output
HD0	Pulse output
485+	Comms +
485-	Comms -
485G	Comms ground



# HD2 - Specifications

*3ph 380/460V 50/60Hz 1.5-500kW*

- Closed loop vector (200% torque)
- 2 channel STO (SIL 2)
- Multi-function LCD keypad
- Integral brake chopper  $\leq 37\text{kW}$
- Integral AC reactor  $\geq 315\text{kW}$
- Integral DC reactor 18.5~110kW
- Profinet, EtherCAT, CANopen & Profibus DP
- Bluetooth & WiFi Control
- PG Encoder cards
- Input/output option card



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# Drives Suite - Free Programming Software



# HD1/HD2 Comparison

Feature	HD1	HD2
<b>GENERAL SPECIFICATIONS</b>		
Single Phase Input	NO	NO
Three Phase Input	0.4~500kW	1.5~500kW
Constant Torque (HD)	YES	YES
Variable Torque (ND)	YES	NO
Torque Vector	YES	YES
Maximum Torque	200%	150%
EMC Filter	YES	YES
DC Reactor	NO	18.5~110kW
AC Reactor	NO	>355kW
External Mountable Keypad	YES	YES
Maximum Frequency	400Hz	400Hz
IP Rating	IP20	IP20

Feature	HD1	HD2
<b>INPUTS / OUTPUTS</b>		
Analogue Inputs	3	2
Digital Inputs	9	6
Pulse Train Inputs	1	2
Analogue Outputs	2	2
Relay Outputs	2	2
Digital Outputs	2	1
Pulse Train Output	YES	YES

Feature	HD1	HD2
<b>CONTROL FUNCTIONS</b>		
PID Control	YES	YES
Braking Chopper	<30kW	<37kW
DC Braking	YES	YES
Preset Speeds	15	15
Safe Torque Off (STO)	NO	YES
Mechanical Brake Control	YES	YES
Torque Control	YES	YES
Closed Loop	NO	YES
Built-In PLC	YES	YES
Real Time Clock	NO	YES
Regenerative Avoidance Ctrl	YES	YES
Parameter Copy Function	YES	YES

# HD1/HD2 Comparison

Feature	HD1	HD2
APPLICATION FUNCTIONS		
Wet Bulb Temp. Estimation Ctrl	NO	NO
Linearization	NO	NO
Fire Mode	NO	NO
Filter Clog Protection	NO	NO
Broken Belt Detection	NO	YES
Cumulative kWh Data Log	YES	YES
Cascading Pump Control	NO	NO
Anti Jamming	NO	NO
Dry Pump Protection	NO	NO
Check Valve Protection	NO	YES
End of Curve Protection	NO	YES

Feature	HD1	HD2
COMMS		
RS485 - ASCII	YES	YES
Modbus RTU	YES	YES
Profibus -DP	OPTION	OPTION
Profinet	OPTION	OPTION
Devicenet	OPTION	NO
CANopen	OPTION	OPTION
Ethernet	NO	OPTION
EtherCAT	NO	OPTION
BACnet MS/TP	NO	OPTION
Metasys N2	NO	NO
USB Port	YES	NO
WiFi	NO	OPTION

Feature	HD1	HD2
OPTIONS		
DIO	NO	NO
AIO	NO	NO
Multi IO	NO	OPTION
Relay	NO	OPTION
Encode Feedback (PG)	NO	OPTION



# HD2 - Q & A

[HD2 Datasheet](#)



**Thank You**



A dark blue world map is centered in the background of the page. Small yellow dots are placed on the map to indicate the locations of IMO's worldwide offices in various countries including the UK, France, Italy, Canada, South Africa, and Australia.

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