IMO

HDI

DUAL RATED

AC Variable Speed Inverter Drives
0.75kW - 500kW (1HP - 670HP)

Driving higher performance

HD1

DUAL RATED

Comprehensively specified inverters for AC motors 0.75kW - 500kW (1HP - 670HP)

- Dual Rated
- Three-phase (200V) up to 55kW (75HP)
- Three-phase (400V) up to 500kW (670HP)
- Three-phase (600V) up to 110kW (150HP)
- Torque vector control
- Integral Modbus-RTU / RS485
- Multiple filter options

2 YEAR GUARANTEE

CE

cULus

TÜV SÜD

RCM (AUS/NZ)

HD1 High Performance AC Inverter Drives

The HD1 range of inverters are high-performance, open loop vector control inverters specifically designed for controlling asynchronous AC induction motors and permanent magnet synchronous motors. Utilising the most advanced sensorless vector control technology, the HD1 range offers unparalleled reliability, environmental adaptability, high precision and stable performance.

The HD1 offers some significant advantages to the customer including a huge range of functions with simple operation, 3 international communication protocols (ModbusRTU, Profibus and CAN) and international certification from TUV and UL.

- Dual rated for HD & ND applications
- Torque Vector control
- Up to 150% starting torque
- Permanent magnet motor control
- Detachable keypad with copy
- Advanced LCD keypad
- IP20 (full range)
- High speed processor

- Modbus RTU/RS485 built in
- Profibus DP card
- CANopen card
- Profinet card
- 9 Digital Inputs
- 3 Analogue Inputs
- 2 Analogue Outputs
- 2 Relay Outputs

- Motor Auto-tune (static and dynamic)
- 2 motor parameter sets
- DC Injection braking
- Flux braking
- Integral brake chopper (<30kW)
- Braking units 37kW & above
- PID Control as standard
- Integral PLC function

- Integral C3 filter
- Category C1 & C2 filter options
- UL/cUL, TUV
- CE Marked
- 2 Year warranty

Setting High Standards

The level of functionality offered by the HD1 range sets the bar high for others to compete with. For example, the HD1 offers two sets of motor parameters which allow users to deploy one HD1 inverter to control different motors, which ultimately leads to costs savings.

High Performance At Low Speeds

The HD1 range offers torque vector control across the full range. IMO is well renowned for manufacturing market-leading variable speed drives and the HD1 (along with its sister SD1 inverter) heralds a new era in feature rich inverter drives due to the sheer array of standard features included that you would normally expect only to find in considerably more expensive models.

The HD1 range delivers stable torque output even at low speeds thanks to its high speed processor, allowing the HD1 to be used in an even wider range of applications including lifts, conveyor systems and high-inertia loads that demand a higher starting torque and rapid controlled braking.

Enhanced Control Functionality

As you would expect, a drive from IMO isn't your average run-of-the-mill product. We produce solutions which tick every box, every time and the HD1 is no different. From offering motor auto-tune (both static and dynamic) which minimises power losses, to PID control which allows motor operation whilst controlling temperature, pressure and flow rate without the use of an external device or controller, together with the inclusion of programmable logic functionality, the HD1 is so packed with features that you wouldn't believe they fit inside its compact and user-friendly form.

Connected For Communications

Every model in the HD1 range offers communication capability. The connection is completed by way of twisted-pair to the dedicated RS-485 terminals found on the control terminal block using the Modbus-RTU protocol, or using Profibus, CANopen or Profinet via an optional card.

Modbus

PROFIBUS PROFINET

CANopen

HD1 Features

HD1 Application Examples

With the array of advanced features and filter options, the HD1 is suited for use in virtually any application, whether it be industrial, commercial or domestic. The following are examples of, but not limited to, the type of application where the HD1 can be employed:-

Heavy Duty Machinery

- Oil
- Mining
- Aggregates

Hoist Applications

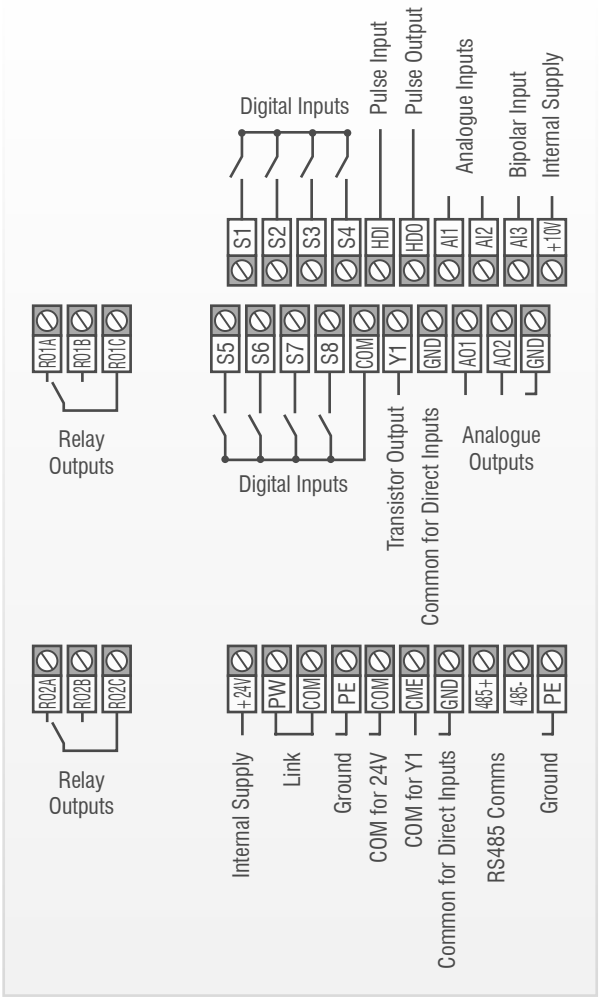
- RTG's
- Cranes & Lifts
- Material Handling

High Resolution LCD Keypad

The optional high resolution LCD keypad provides clear visibility of all information allowing easy programming and maintenance. With nine lines of text and three display modes, (programming, run & stop) the HD1-KP-LCD makes setting up the HD1 a simple and stress free operation.

Programming State | Running State | Stopping State

HD1 Terminal Layout



Conveyor Applications

- Metals
- Logistics
- Food Machinery

Pump & Fan Applications

- Fans
- HVAC
- Pumps
- BMS Systems
- Air Compression

Options & Ordering Codes

HD1 - 75A - 43

Series

HD1 Inverter Drive	HD1

Input 400V Three Phase

Output Power kW (HP)

1.5kW	(2HP)	3.7A	30kW	(40HP)	60A	185kW	(250HP)	340A
2.2kW	(3HP)	5A	37kW	(50HP)	75A	200kW	(270HP)	380A
4.0kW	(5.5HP)	9.5A	45kW	(60HP)	92A	220kW	(300HP)	425A
5.5kW	(7.5HP)	14A	55kW	(75HP)	115A	250kW	(335HP)	480A
7.5kW	(10HP)	18.5A	75kW	(90HP)	150A	280kW	(375HP)	530A
11kW	(15HP)	25A	90kW	(125HP)	180A	315kW	(420HP)	600A
15kW	(20HP)	32A	110kW	(150HP)	215A	350kW	(470HP)	650A
18.5kW	(25HP)	38A	132kW	(175HP)	260A	400kW	(535HP)	720A
22kW	(30HP)	45A	160kW	(215HP)	305A	500kW	(670HP)	860A

HD1 - 130A - 23

Input 200V Three Phase

Output Power kW (HP)

0.75kW	(1HP)	4.5A	15kW	(20HP)	55A
1.5kW	(2HP)	7A	18.5kW	(25HP)	70A
2.2kW	(3HP)	10A	22kW	(30HP)	80A
4kW	(5.5HP)	16A	30kW	(40HP)	110A
5.5kW	(7.5HP)	20A	37kW	(50HP)	130A
7.5kW	(10HP)	30A	45kW	(60HP)	160A
11kW	(15HP)	42A	55kW	(75HP)	200A

HD1 - 52A - 63

Input 600V Three Phase

Output Power kW (HP)

18.5kW	(25HP)	27A	55kW	(75HP)	86A
22kW	(30HP)	35A	75kW	(90HP)	98A
30kW	(40HP)	45A	90kW	(125HP)	120A
37kW	(50HP)	52A	110kW	(150HP)	150A
45kW	(60HP)	62A			

HD1 Ratings & Specifications

	Model	HD Mode (150% Overload - 1 min)				ND 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)
Three Phase 400V	HD1-3.7A-43	1.5 (2)	8	5	3.7	-	-	-	-
	HD1-5A-43	2.2 (3)	8	5.8	5	-	-	-	-
	HD1-9.5A-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	38
	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	92
	HD1-92A-43	45 (60)	4	94	92	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 (125)	2	190	180
	HD1-180A-43	90 (125)	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
	HD1-860A-43	500 (670)	2	890	860	-	-	-	-

	Model	Output Power kW (HP)	Carrier Frequency (kHz)	Input Current (A)	Rated Output Current (A)
Three Phase 200V	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 Frequncy (kHz)	Input Current (A)	Rated Output Current (A)
Three Phase 600V	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 (55)	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	145	150

HD (Heavy Duty) and ND (Normal Duty) offer 150% and 120% overload respectively and are easily selectable with one configuration parameter.

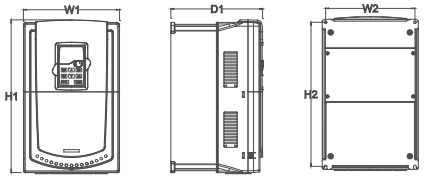
IMO rating data is based upon default carrier frequency and 40°C ambient temperature. Please contact IMO for further support in selecting and sizing a comparable drive for your application.

Dimensions (mm)

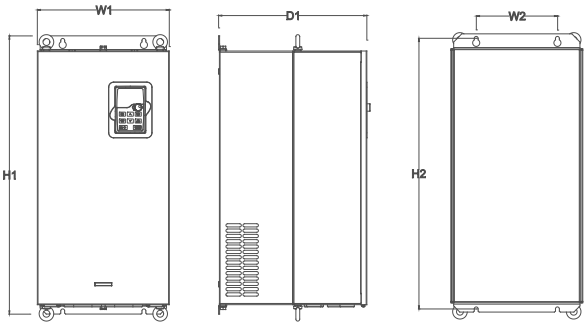
	Model	W1	W2	H1	H2	D1	Weight	Frame Style
200V	HD1-4.5A-23	126	115	193	175	174.5	2.7	A
	HD1-7A-43 to HD1-10A-23	146	131	263	243.5	181	4	
	HD1-16A-23 to HD1-20A-23	170	151	331.5	303.5	216	6.5	
	HD1-30A-23	230	210	342	311	216	9	
	HD1-42A-23 to HD1-55A-23	255	237	407	384	245	11.5	
	HD1-70A-23 to HD1-110A-23	270	130	555	540	325	32	B
	HD1-130A-23 to HD1-200A-23	325	200	680	661	365	67	

	Model	W1	W2	H1	H2	D1	Weight	Frame Style
400V	HD1-3.7A-43 to HD1-5A-43	126	115	193	175	174.5	2.7	A
	HD1-9.5A-43 to HD1-14A-43	146	131	263	243.5	181	4	
	HD1-18.5A-43 to HD1-25A-43	170	151	331.5	303.5	216	6.5	
	HD1-32A-43 to HD1-38A-43	230	210	342	311	216	9	
	HD1-45A-43 to HD1-60A-43	255	237	407	384	245	11.5	
	HD1-75A-43 to HD115A-43	270	130	555	540	325	32	B
	HD1-150A-43 to HD1-215A-43	325	200	680	661	365	67	
	HD1-260A-43 to HD1-380A-43	500	180	870	850	360	110	C
	HD1-425A-43 to HD1-600A-43	750	230	1410	1390	380	237	D
	HD1-650A-43 to HD1-860A-43	620	230	1700	1678	560	450	E

	Model	W1	W2	H1	H2	D1	Weight	Frame Style
600V	HD1-27A-63 ~ HD1-35A-43	270	130	555	540	325	33	B
	HD1-45A-63 ~ HD1-150A-63	325	200	680	661	365	58	



Frame Style A



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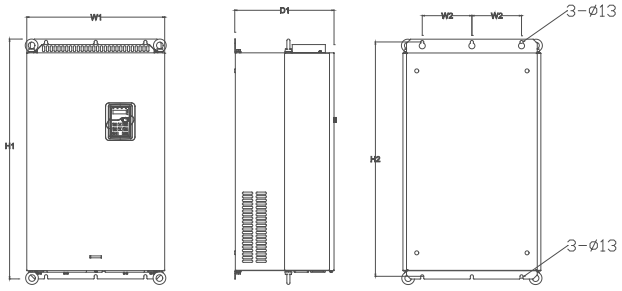
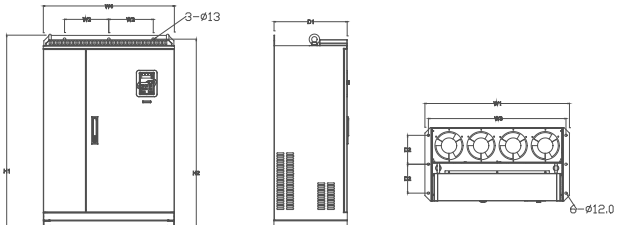
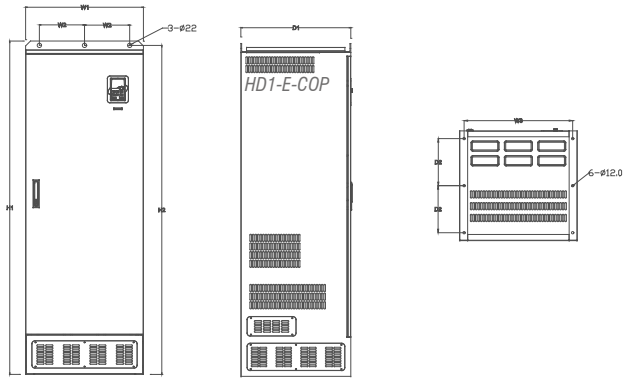


Frame Style C



Frame Style D



Frame Style E

Ordering Information for Accessories

Model	Description
HD1-E-PDP	Profibus option card
HD1-E-COP	CANopen option card
HD1-E-PRF	PROFinet option card
HD1-KP-LED	HD LED Keypad (std)
HD1-KP-LCD	HD LCD Keypad
DBU22/37-9	Dynamic brake unit, 22-37kW / 400V
DBU45/75-4	Dynamic brake unit, 45-75kW / 400V
DBU90/110-4	Dynamic brake unit, 90-110kW / 400V
DBU132-4	Dynamic brake unit, 132kW / 400V
DBU160/200-4	Dynamic brake unit, 160-200kW / 400V
DBU220/250-4	Dynamic brake unit, 220-250kW / 400V

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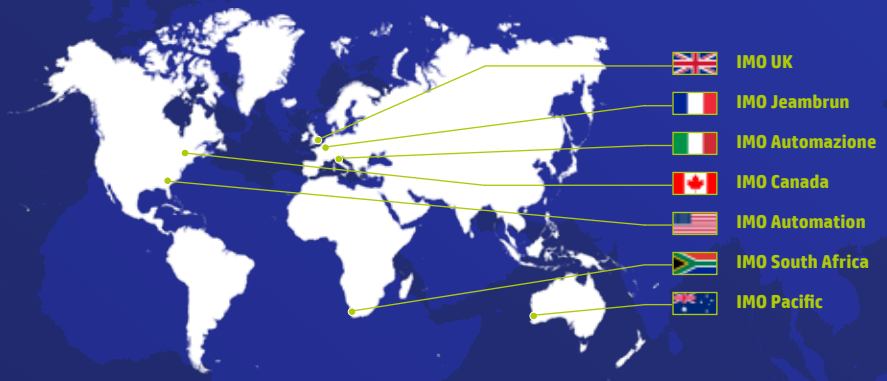

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