

HD2 Series

AC Variable Speed Inverters

3 Phase 380/440V 50/60Hz 1.5~500kW

- Torque Vector control
- Up to 150% starting torque
- HD rated for demanding applications
- Asynchronous & synchronous motor control
- Advanced LCD keypad (16 lines of text)
- Motor Auto-tune (static and dynamic)
- Safe Torque Off (STO)
- 2 motor parameter sets.
- DC Injection braking
- Flux braking
- Integral brake chopper (<37kW)
- Integral AC reactor (>220kW)
- Integral DC reactor (18.5~110kW)
- PID Control as standard
- Modbus RTU/RS485 built in
- PG Encoder control
- IP20 (all models)
- Wifi card
- Bluetooth card
- Profibus DP card
- CANopen card
- Profinet card.
- Multi I/O card
- 6 Digital Inputs
- 2 Analogue Inputs
- 1 Analogue Output
- 2 Relay Outputs
- 2 Digital Outputs
- Integral C3 filter
- Category C1 & C2 filter options
- CE & RCM Marked
- 3 Year warranty



Ordering Information

| | | | | | | | |
|-----------------------------|--|--------------|----------------|--|-------------|-------------|--|
| HD2 | | - | 75A | | - | 43 | |
| Series | | | Input | | | Input | |
| HD2 Inverter Drive | | | 440V | | | Three Phase | |
| HD2 | | | | | | | |
| Output Power kW (HP) | | | | | | | |
| 1.5kW (2HP) | | 3.7A | 90kW (125HP) | | 180A | | |
| 2.2kW (3HP) | | 5A | 110kW (150HP) | | 215A | | |
| 4.0kW (5.5HP) | | 9.5A | 132kW* (175HP) | | 260A | | |
| 5.5kW (7.5HP) | | 14A | 160kW* (215HP) | | 305A | | |
| 7.5kW (10HP) | | 18.5A | 185kW* (250HP) | | 340A | | |
| 11kW (15HP) | | 25A | 200kW* (270HP) | | 380A | | |
| 15kW (20HP) | | 32A | 220kW* (300HP) | | 425A | | |
| 18.5kW (25HP) | | 38A | 250kW* (335HP) | | 480A | | |
| 22kW (30HP) | | 45A | 280kW* (375HP) | | 530A | | |
| 30kW (40HP) | | 60A | 315kW* (420HP) | | 600A | | |
| 37kW (50HP) | | 75A | 355kW* (475HP) | | 650A | | |
| 45kW (60HP) | | 92A | 400kW* (535HP) | | 720A | | |
| 55kW (75HP) | | 115A | 450kW* (600HP) | | 820A | | |
| 75kW (90HP) | | 150A | 500kW* (670HP) | | 860A | | |

* All models 132kW and above are UL/cUL approved

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Technical Specifications

Three Phase 440V

| | Function Description | Specification |
|--------------------------------------|---|---|
| Power Input | Input Voltage (V) | AC 3PH Rated Voltage - 460V; |
| | Allowable Voltage Fluctuation | -15% to +10% |
| | Input Frequency (Hz) | 50Hz/60Hz, allowable range: 47 to 63Hz |
| Power Output | Output Voltage (V) | 0 to Input voltage |
| | Output Frequency (Hz) | 0 to 400Hz |
| Technical Control Performance | Control Mode | SVPWM control, SVC, VC |
| | Motor Type | Asynchronous motor, permanent-magnet synchronous motor |
| | Speed Regulation Ratio | Asynchronous motor 1:200 (SVC); Synchronous motor 1:20 (SVC); 1:1000 (VC) |
| | Speed Control Precision | ±0.2% (SVC), ±0.02% (VC) |
| | Speed Fluctuation | ±0.3% (SVC) |
| | Torque Response | <20ms (SVC), <10ms (VC) |
| | Torque Control Precision | 10% (SVC), 5% (VC) |
| | Starting Torque | Asynchronous motor: 0.25Hz / 150% (SVC), Synchronous motor: 2.5Hz / 150% (SVC), 0Hz / 200% (VC) |
| Running Control Performance | Overload Capacity | Constant Torque: 150%: 1 min; 180%: 10s; 200%: 1s, Variable Torque: 120%: 1 min; 150%: 10s; 180%: 1s |
| | Frequency Setup Mode | Digital, analog, pulse frequency, multi-step speed running, simple PLC, PID, Modbus & multiple Ethernet-based communication |
| | Auto. Voltage Regulation Function | Keep the output voltage constant when grid voltage changes |
| | Fault Protection Function | Over 30 fault protection functions: overcurrent, overvoltage, undervoltage, over-temperature, phase loss & overload, etc. |
| Peripheral Interface | Speed Tracking Restart | Realise impact-free starting of the motor in rotating |
| | Analog Input | 2 (AI1: 0-10V/4-20mA; AI2: -10V to +10V) |
| | Analog Output | 1 (AO1: 0-10V/4-20mA) |
| | Digital Input | 4x DI, 2x High Speed Inputs |
| | Digital Output | 1x DO, 1x Pulse Output |
| | Relay Output | 2x programmable relay output, NO/NC contact |
| | Communication Interface | 1x RS485 (non-isolated), 1x USB |
| Other | STO Input | 2x redundant input |
| | Installation Mode | Wall mounting, Flange mounting, Floor mounting |
| | Temperature | -10°C to +50°C (Derating is required if the ambient temperature exceeds 40°C) |
| | Protection Level | IP20 |
| | Cooling Mode | Forced air cooling |
| | Braking Unit | 15kW or below built-in (220V models); 30kW or below built-in (460V models) |
| | STO Level | SIL2 |
| EMC Filter | All models fulfill the requirements of IEC61800-3 C3, up to 30m cable length shielded | |

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Technical Specifications

Three Phase 440V

| | Model | Rated Power kW (HP) | Carrier Frequency (kHz) | Input Current (A) | Output Current (A) | Contactors (A) | Fuse/ MCCB (A) |
|------------------|--------------|---------------------|-------------------------|-------------------|--------------------|----------------|----------------|
| Three Phase 440V | HD2-3.7A-43 | 1.5 (2) | 8 | 5 | 3.7 | 10 | 17.4/16 |
| | HD2-5A-43 | 2.2 (3) | 8 | 5.8 | 5 | 10 | 17.4/16 |
| | HD2-9.5A-43 | 4 (5.5) | 8 | 13.5 | 9.5 | 16 | 30/25 |
| | HD2-14A-43 | 5.5 (7.5) | 8 | 19.5 | 14 | 16 | 45/25 |
| | HD2-18.5A-43 | 7.5 (10) | 8 | 25 | 18.5 | 25 | 60/40 |
| | HD2-25A-43 | 11 (15) | 8 | 32 | 25 | 32 | 78/63 |
| | HD2-32A-43 | 15 (20) | 4 | 40 | 32 | 50 | 105/63 |
| | HD2-38A-43 | 18.5 (25) | 4 | 47 | 38 | 63 | 114/100 |
| | HD2-45A-43 | 22 (30) | 4 | 56 | 45 | 80 | 138/100 |
| | HD2-60A-43 | 30 (40) | 4 | 70 | 60 | 95 | 186/125 |
| | HD2-75A-43 | 37 (50) | 4 | 80 | 75 | 120 | 228/160 |
| | HD2-92A-43 | 45 (60) | 4 | 94 | 92 | 135 | 270/200 |
| | HD2-115A-43 | 55 (75) | 4 | 128 | 115 | 170 | 315/200 |
| | HD2-150A-43 | 75 (90) | 2 | 160 | 150 | 230 | 420/250 |
| | HD2-180A-43 | 90 (125) | 2 | 190 | 180 | 280 | 480/315 |
| | HD2-215A-43 | 110 (150) | 2 | 225 | 215 | 315 | 630/400 |
| | HD2-260A-43 | 132 (175) | 2 | 265 | 260 | 380 | 720/400 |
| | HD2-305A-43 | 160 (215) | 2 | 310 | 305 | 450 | 870/630 |
| | HD2-340A-43 | 185 (250) | 2 | 345 | 340 | 580 | 1110/630 |
| | HD2-380A-43 | 200 (270) | 2 | 385 | 380 | 580 | 1110/630 |
| HD2-425A-43 | 220 (300) | 2 | 430 | 425 | 630 | 1230/800 | |
| HD2-480A-43 | 250 (335) | 2 | 485 | 480 | 700 | 1380/800 | |
| HD2-530A-43 | 280 (375) | 2 | 545 | 530 | 780 | 1500/1000 | |
| HD2-600A-43 | 315 (420) | 2 | 610 | 600 | 900 | 1740/1200 | |
| HD2-650A-43 | 355 (475) | 2 | 625 | 650 | 960 | 1860/1280 | |
| HD2-720A-43 | 400 (535) | 2 | 715 | 720 | 1035 | 2010/1380 | |
| HD2-820A-43 | 450 (600) | 2 | 840 | 820 | 1222 | 2445/1630 | |
| HD2-860A-43 | 500 (670) | 2 | 890 | 860 | 1290 | 2505/1720 | |

Dimensions (mm) & Frame Sizes

| Model | Width | Height | Depth | Frame Size | Weight |
|--------------|-------|--------|-------|------------|--------|
| HD2-3.7A-43 | 126 | 186 | 184.4 | 1 | 2kg |
| HD2-5A-43 | 126 | 186 | 185 | | |
| HD2-9.5A-43 | 126 | 186 | 200.9 | 2 | 2.5kg |
| HD2-14A-43 | 126 | 186 | 200.9 | | |
| HD2-18.5A-43 | 146 | 256 | 191.9 | 3 | 3kg |
| HD2-25A-43 | 170 | 320 | 219.2 | 4 | 6kg |
| HD2-32A-43 | 170 | 320 | 219.2 | | |
| HD2-38A-43 | 200 | 340.6 | 207.2 | 5 | 8.5kg |
| HD2-45A-43 | 200 | 340.6 | 207.2 | | |
| HD2-60A-43 | 250 | 400 | 222.4 | 6 | 16kg |
| HD2-75A-43 | 250 | 400 | 222.4 | | |
| HD2-92A-43 | 282 | 560 | 257.1 | 7 | 25kg |
| HD2-115A-43 | 282 | 560 | 257.1 | | |
| HD2-150A-43 | 282 | 560 | 257.1 | | |
| HD2-150A-43 | 282 | 560 | 257.1 | | |

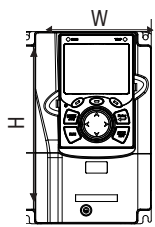
| Model | Width | Height | Depth | Frame Size | Weight |
|-------------|-------|--------|-------|------------|--------|
| HD2-180A-43 | 338 | 554 | 329.2 | 8 | 41kg |
| HD2-215A-43 | 338 | 554 | 329.2 | | |
| HD2-260A-43 | 500 | 870 | 360 | 9 | 85kg |
| HD2-305A-43 | 500 | 870 | 360 | | |
| HD2-340A-43 | 500 | 870 | 360 | | |
| HD2-380A-43 | 500 | 870 | 360 | | |
| HD2-425A-43 | 750 | 1410 | 380 | 10 | 135kg |
| HD2-480A-43 | 750 | 1410 | 380 | | |
| HD2-530A-43 | 750 | 1410 | 380 | | |
| HD2-600A-43 | 750 | 1410 | 380 | | |
| HD2-650A-43 | 620 | 1700 | 560 | 11 | 350kg |
| HD2-720A-43 | 620 | 1700 | 560 | | |
| HD2-820A-43 | 620 | 1700 | 560 | | |
| HD2-860A-43 | 620 | 1700 | 560 | | |

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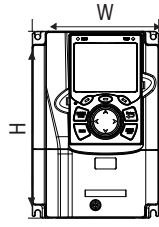
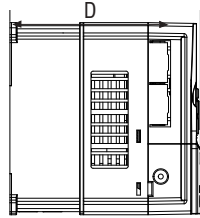
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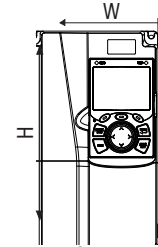
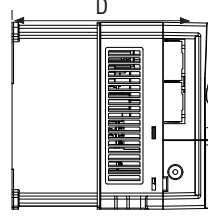
Dimensions (mm) & Frame Sizes



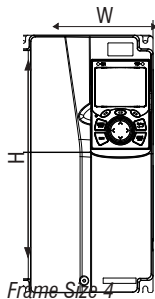
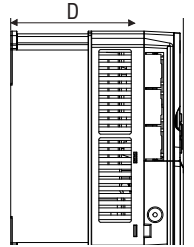
Frame Size 1



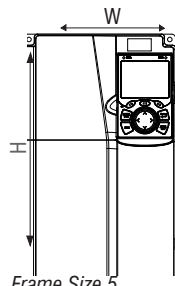
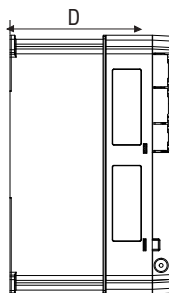
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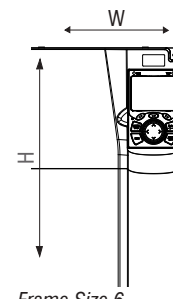
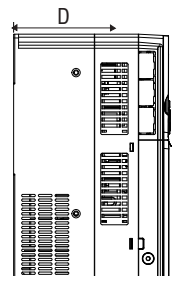
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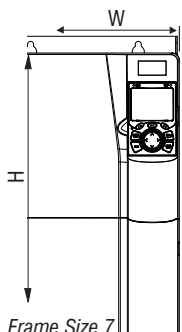
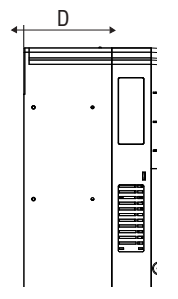
Frame Size 4



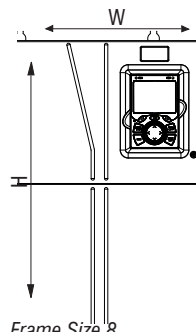
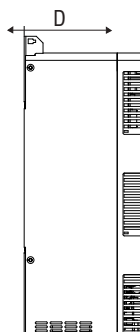
Frame Size 5



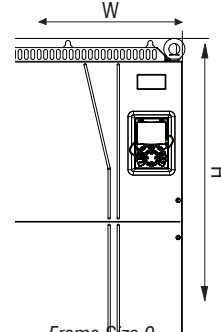
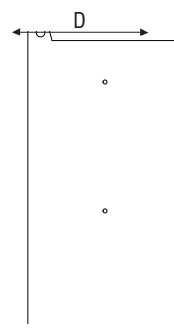
Frame Size 6



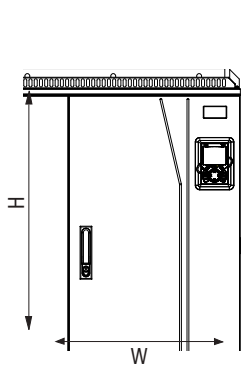
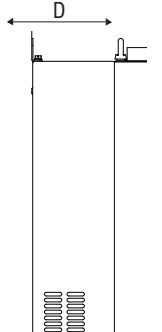
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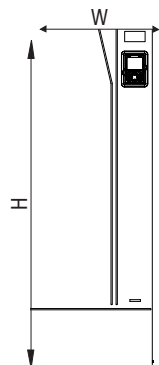
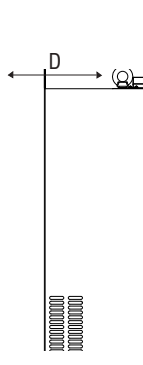
Frame Size 8



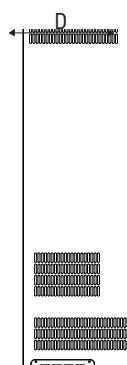
Frame Size 9



Frame Size 10



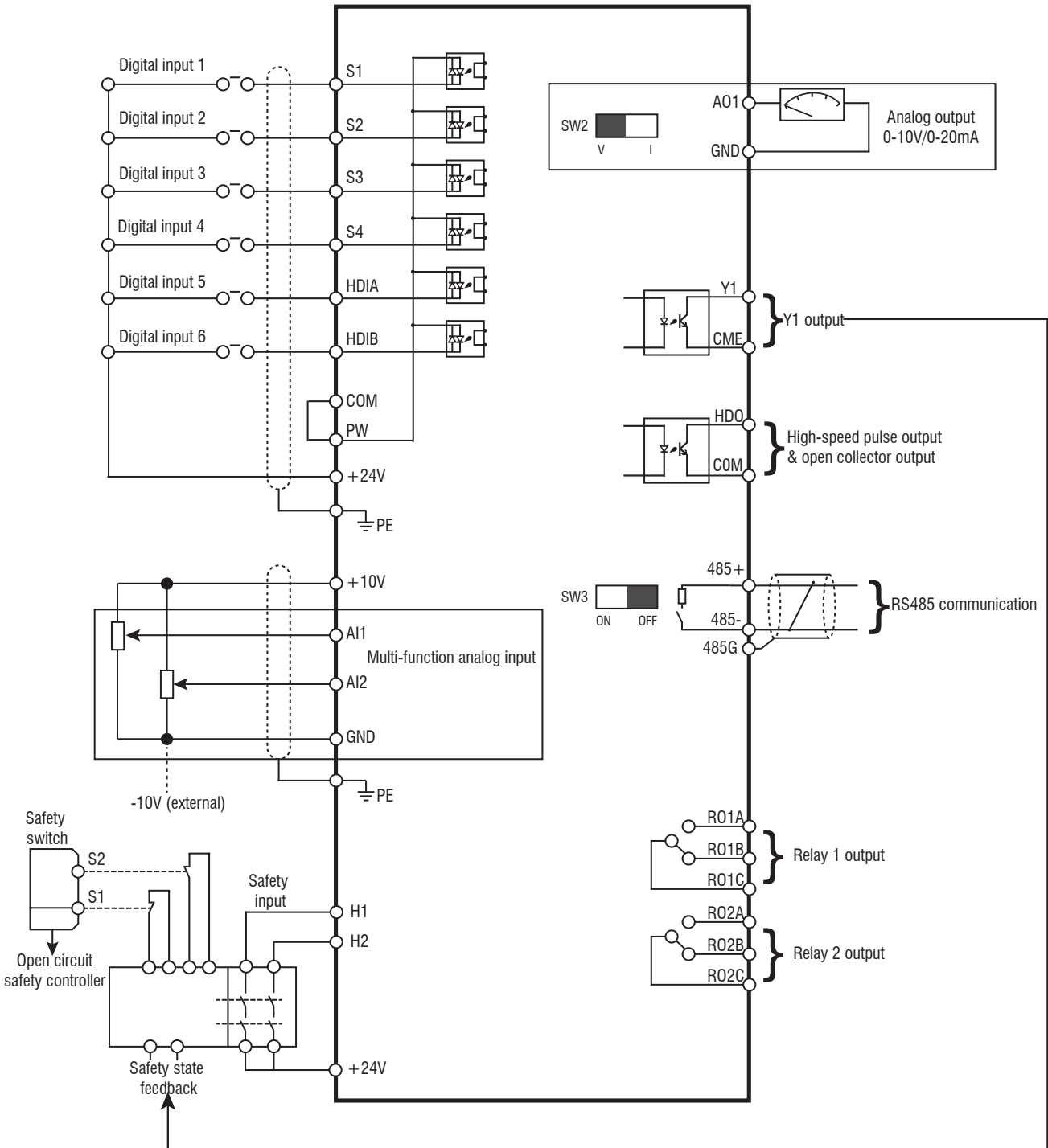
Frame Size 11



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Control Connections



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Accessories

| Model | Input Reactor | Output Reactor | DC Reactor | Braking Unit |
|--------------|---------------|----------------|------------|-------------------|
| HD2-3.7A-43 | ACLC-1.5-4 | OCLC-1.5-4 | N/C | Integral |
| HD2-5A-43 | ACLC-2.2-4 | OCLC-2.2-4 | N/C | Integral |
| HD2-9.5A-43 | ACLC-4.0-4 | OCLC-4.0-4 | N/C | Integral |
| HD2-14A-43 | ACLC-5.5-4 | OCLC-5.5-4 | N/C | Integral |
| HD2-18.5A-43 | ACLC-7.5-4 | OCLC-7.5-4 | N/C | Integral |
| HD2-25A-43 | ACLC-11-4 | OCLC-11-4 | N/C | Integral |
| HD2-32A-43 | ACLC-15-4 | OCLC-15-4 | N/C | Integral |
| HD2-38A-43 | ACLC-18-4 | OCLC-18-4 | Integral | Integral |
| HD2-45A-43 | ACLC-22-4 | OCLC-22-4 | Integral | Integral |
| HD2-60A-43 | ACLC-37-4 | OCLC-37-4 | Integral | Integral |
| HD2-75A-43 | ACLC-37-4 | OCLC-37-4 | Integral | Integral |
| HD2-92A-43 | ACLC-45-4 | OCLC-45-4 | Integral | DBU45/75-4 |
| HD2-115A-43 | ACLC-55-4 | OCLC-55-4 | Integral | DBU45/75-4 |
| HD2-150A-43 | ACLC-75-4 | OCLC-75-4 | Integral | DBU45/75-4 |
| HD2-180A-43 | ACLC-110-4 | OCLC-110-4 | Integral | DBU90/110-4 |
| HD2-215A-43 | ACLC-110-4 | OCLC-110-4 | Integral | DBU90/110-4 |
| HD2-260A-43 | ACLC-132-4 | OCLC-132-4 | DCLC-132-4 | DBU132-4 |
| HD2-305A-43 | ACLC-160-4 | OCLC-200-4 | DCLC-160-4 | DBU160/200-4 |
| HD2-340A-43 | ACLC-200-4 | OCLC-200-4 | DCLC-220-4 | DBU160/200-4 |
| HD2-380A-43 | ACLC-200-4 | OCLC-200-4 | DCLC-220-4 | DBU160/200-4 |
| HD2-425A-43 | ACLC-280-4 | OCLC-280-4 | DCLC-220-4 | DBU220/250-4 |
| HD2-480A-43 | ACLC-280-4 | OCLC-280-4 | DCLC-280-4 | DBU220/250-4 |
| HD2-530A-43 | ACLC-280-4 | OCLC-280-4 | DCLC-280-4 | DBU160/200-4 (x2) |
| HD2-600A-43 | ACLC-350-4 | OCLC-350-4 | DCLC-315-4 | DBU160/200-4 (x2) |
| HD2-650A-43 | Integral | OCLC-350-4 | DCLC-400-4 | DBU160/200-4 (x2) |
| HD2-720A-43 | Integral | OCLC-400-4 | DCLC-400-4 | DBU160/200-4 (x2) |
| HD2-820A-43 | Integral | OCLC-500-4 | DCLC-500-4 | DBU220/250-4 (x2) |
| HD2-860A-43 | Integral | OCLC-500-4 | DCLC-500-4 | DBU220/250-4 (x2) |

Expansion Card Selection

| Expansion Card Type | Part Number | Part Description |
|---------------------|---------------|---|
| I/O Card | HD2-E-IO | IO Expansion Card (4DI, 1 DO, 1 AI, 1 AO, 2RO) |
| | HD2-E-IO2 | IO Expansion Card (1 PT100, 1 PT1000, 4 DI, 2 RO) |
| PLC Card | HD2-E-PLC | Programmable Expansion Card (CODESYS) |
| Communication Card | HD2-E-BTP | Bluetooth Communication Card (Internal Antenna) |
| | HD2-E-BTM | Bluetooth Communication Card (External Antenna) |
| | HD2-E-ENET | Ethernet Communication Card |
| | HD2-E-EIP | Ethernet/IP Communication Card |
| | HD2-E-ECAT | EtherCAT Communication Card |
| | HD2-E-WFP | WiFi Communication Card (Internal Antenna) |
| | HD2-E-WFM | WiFi Communication Card (External Antenna) |
| | HD2-E-COP | CANopen Communication Card |
| | HD2-E-CAN | CAN Master-Slave Communication Card |
| | HD2-E-PDP | PROFIBUS-DP Communication Card |
| | HD2-E-PRF | PROFINET Communication Card |
| | HD2-E-MTCP | Modbus TCP Communication Card |
| PG Card | HD2-E-PGIM | Multi-Function Incremental PG Card |
| | HD2-E-PGIM-24 | 24V Multi-Function Incremental PG Card |
| | HD2-E-PGI | 5V Differential PG Card |
| | HD2-E-PGR | Rotary Transformer PG Card |
| Power Supply Card | HD2-E-APS | 24V DC Aux. Power Supply Card |
| Accessories | HD2-KP | LCD Multi-function keypad |
| | HD2-KP-MB | Keypad mounting bracket |