MR-HPHD-01 SERIES

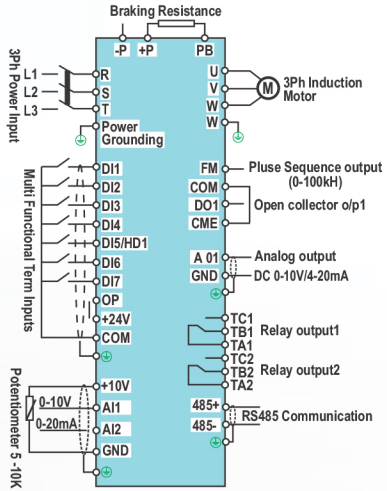
(High-Performance Heavy-Duty Frequency Converter)

MR-HPHD-01 is the newest AC frequency converter from MACTROL-REFU developed especially for heavy duty applications. Thanks to advanced current vector control algorithm and newest hardware, MR-HPHD-01 has high stability and perfect motor control performance developed after listening and understanding customer's requirements. With industry-leading drive performance and functionality control, using unique current vector control algorithm can efficiently drive the motor to achieve high accuracy, high torque and high-performance control. MR-HPHD-01 supports full range of input voltage (AC 120V / 220V / 380V / 460V and etc.) along with complete functions for different applications.

- Advanced motor control technology support both Open loop vector control (SVC), Closed loop vector control (FVC) and V/F control.
- Different input voltage (220V single Phase/220V 3 phase/380V 3 phase / 460V 3 Phase). High starting torque characteristics and precise speed control.
- Rich and flexible I/O accesses and field bus options. Suitable for all regions which have different grid and voltage.
- Upgraded I/O (NPN/PNP compatible) can meet more application requirement without controller (PLC) like elevator.

Frequency Converter Model	Motor Adapted kW	Motor Adapted HP	Rated Input A	Rated Output A
1PH single phase input : AC 220V (±15%) 50/60Hz				
MR-HPHD-01-00D75CT1	0.75	to	37Kw	On Demand
3PH 3-phase input : AC 220V (±15%) 50/60Hz				
MR-HPHD-01-00D75CT2	0.75	to	200Kw	On Demand
3PH 3-phase input : AC 380V-440V (±10%), 50/60Hz				
MR-HPHD-01-00D75CT3	0.75	1	3.5	2.1
MR-HPHD-01-001D5CT3	1.5	2	5.0	3.8
MR-HPHD-01-002D2CT3	2.2	3	5.8	5.1
MR-HPHD-01-00400CT3	4.0	5	10.5	9.0
MR-HPHD-01-005D5CT3	5.5	7.5	14.6	13.0
MR-HPHD-01-007D5CT3	7.5	10	20.5	17.0
MR-HPHD-01-00110CT3	11.0	15	26.0	25.0
MR-HPHD-01-01500CT3	15.0	20	35.0	32.0
MR-HPHD-01-018D5CT3	18.5	25	42.0	37.0
MR-HPHD-01-02200CT3	22.0	30	50.0	45.0
MR-HPHD-01-03000CT3	30.0	40	68.0	60.0
MR-HPHD-01-03700CT3	37.0	50	83.0	75.0
MR-HPHD-01-04500CT3	45.0	60	102.0	91.0
MR-HPHD-01-05500CT3	55.0	70	124.0	112.0
MR-HPHD-01-07500CT3	75.0	100	169.0	150.0
MR-HPHD-01-09000CT3	90.0	125	203.0	176.0
MR-HPHD-01-01100CT3	110.0	150	248.0	210.0
MR-HPHD-01-01320CT3	132.0	175	256.0	253.0
MR-HPHD-01-01600CT3	160.0	210	307.0	304.0
MR-HPHD-01-01850CT3	185.0	245	350.0	340.0
MR-HPHD-01-02000CT3	200.0	260	385.0	377.0
MR-HPHD-01-02200CT3	220.0	300	430.0	426.0
MR-HPHD-01-02500CT3	250.0	350	468.0	465.0
MR-HPHD-01-02800CT3	280.0	370	525.0	520.0
MR-HPHD-01-03150CT3	315.0	420	590.0	585.0
MR-HPHD-01-03550CT3	355.0	480	665.0	650.0
MR-HPHD-01-04000CT3	400.0	530	785.0	725.0
MR-HPHD-01-00450CT3	450.0	600	883.0	820.0
MR-HPHD-01-00500CT3	500.0	670	954.0	920.0
MR-HPHD-01-00560CT3	560.0	750	1085.0	1030.0
MR-HPHD-01-00630CT3	630.0	840	1250.0	1200.0
3PH 3-phase input: AC 440V-460V (±10%), 50/60Hz				
MR-HPHD-01-00D75CT4	0.75Kw	to	630Kw	On Demand

SCHEMATIC POWER & CONTROL DRAWING



MACTROL -REFU ← **MR-XXXX–XX-7D5 CT 3**

EcoHD-1B (Heavy Duty Low Cost Drive up to 4kW)
HPHD-01 (Ultra Heavy Duty Drive up to 630kW)
HPHDL-01 (Ultra Heavy Duty Lift Drive up to 75kW)
HPHD-1C (Heavy Duty Drive up to 37kW)
HPHD-1B (Heavy Duty Drive up to 160kW)

Code	Adaptation
D75	0.75 kW
7D5	7.5 kW
011	11 kW
18D5	18.5 kW
110	110 kW
630	630 kW

01/1C/1B/165

Code	Voltage
1	Single-phase 220V
2	Three-phase 220V
3	Three-phase 415V
4	Three-phase 440V
5	Three phase 690V

Code	TYPE
CT	Constant Torque
VT	Variable Torque (Fan/Pump)

MR-HPHD-I65 SERIES

(High-Performance Heavy-Duty Frequency Converter)

- **Washdown and Watertight**
- **For Indoor and Outdoor use**
- **Ideal for Wet, Chemically, Vapourised Environments**
- **Strong & Robust built**
- **Available from 0.75 kW-37 kW**

	Item	Specifications
	Control system	High performance of current vector control technology to realize a synchronous motor and synchronous motor control for Induction & Synchronous motors.
	Maximum frequency	Vector control: 0~300Hz, V/F control: 0~500Hz
	Carrier frequency	0.5k~16kHz; the carrier frequency will be automatically adjusted according to the load characteristics
	Input frequency resolution	Digital setting: 0.01Hz Analog setting : maximum frequency ×0.025%
	Control mode	Open loop vector control (SVC), Closed loop vector control (FVC), V/F control
	Startup torque	Type G: 0.5Hz/200%(SVC) :0Hz/300%(FVC)
Basic function	Speed stabilizing precision	±0.5% (SVC) Speed stabilizing precision
Basic function	Torque control precision	±5% (FVC)
Basic function	Over load capability	G type: rated current 150% -1 minute, rated current % -200% seconds;
Basic function	Torque boost	Auto torque boost function Manual torque boost 0.1%~ 30.0%
Basic function	V/F curve	Linear V/F, Multi point V/F and Square V/F curve (power of 1.2, 1.4, 1.6, 1.8, 2)
Basic function	V/F separation	In 2 ways separation, semi separation
Basic function	Acc. /dec. curve	Straight line or S curve acceleration and deceleration mode Four kinds of acceleration and deceleration time. Acceleration and deceleration time range between 0.0s to 6500.0s
	DC brake	DC brake frequency: 0.00Hz to maximum frequency, brake time: 0.0s to 36.0s, and brake current value :0.0% to 100.0%.
	Simple PLC & MS speed running	It can realize at maximum of 16 segments speed running via the built-in PLC or control terminal.
	Built-in PID	It is easy to realize process-controlled close loop control system.
	Auto voltage regulation (AVR)	It can keep constant output voltage automatically in case of change of network voltage.
Personalized	Instantaneous stop non-stop	When instantaneous power off, voltage reduction is compensated through load feedback energy, which could make inverter keep running in a short period of time.
Personalized	Timing control	Timing control function : set time range 0 Min~6500.0Min
Personalized	Multiple motor switch	4 groups of motor parameter, which can realize 4-motor switch control
Personalized	Multi-threaded bus support	Support 3 kinds of field bus: RS485, Profibus-DP, CAN open
Personalized	Motor overheat protection	Select optional H5PC1 analog input AI3x can accept the motor temperature sensor input (PT100 PT1000)
Personalized	Multi-encoder support	Support difference, open collector, UVW, rotary transformer, sine cosine encoder etc.
Personalized	Programmable PLC	Select optional user programmable card which can realize secondary development, programming mode compatible with Drino PLC.
Keyboard Operation	LED display	Realize parameter setting, status monitoring function
Keyboard Operation	Keyboard potentiometer	Equipped with keyboard potentiometer or coding potentiometer
Keyboard Operation	Key lock & function selection	Realize button locking, define operation range for part of buttons to prevent operation fault.
Keyboard Operation	Protection function	It can implement power-on motor short circuit detection, input/output phase loss protection, over current protection over voltage protection under voltage protection., over heating protection and overload protection.
Keyboard Operation	Optional parts	Liquid crystal display operation panel, brake component, multi-function extended card (1.IO extended card 2.user programmable card), RS485 communication card, Profibus-DP communication card, CAN open communication card, differential input PG card, UVW differential input PG card, rotating inverter PG card, OC input PG card.
Environment	Using place	Indoor and be free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapour, drip or salt for IP20 & for IP65 as per IP chart.
Environment	Altitude	Below 1000m
Environment	Ambient temperature	–10 °C to +50 °C (De-rating use when under ambient temperature of 50°C to 60°C)
Environment	Humidity	Less than 95% RH, without condensing
Environment	Vibration	Less than 5.9 m/s2 (0.6g)
Environment	Storage temperature	–20 degree Celsius +60 degree Celsius