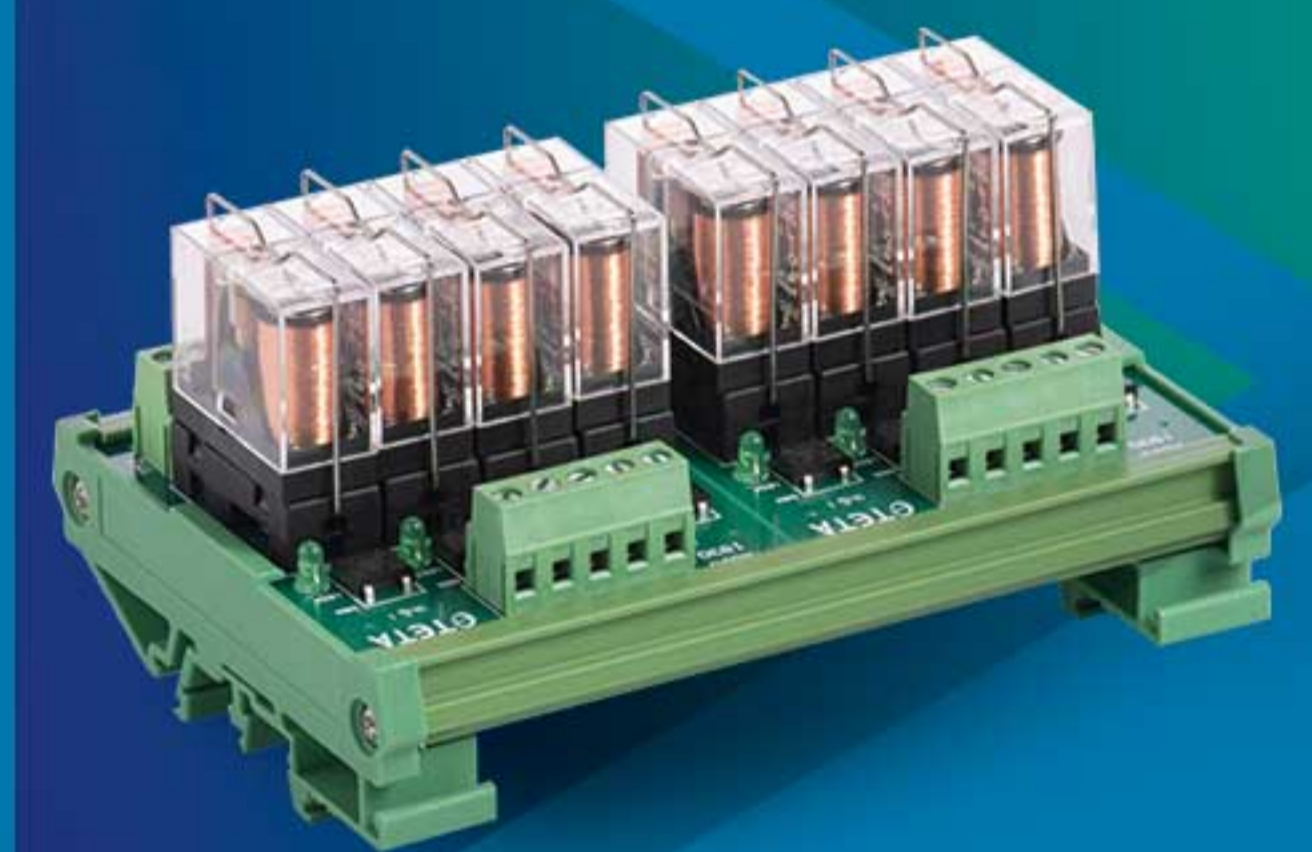


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01-1

S310 Series (0.5HP ~ 2HP) 220V

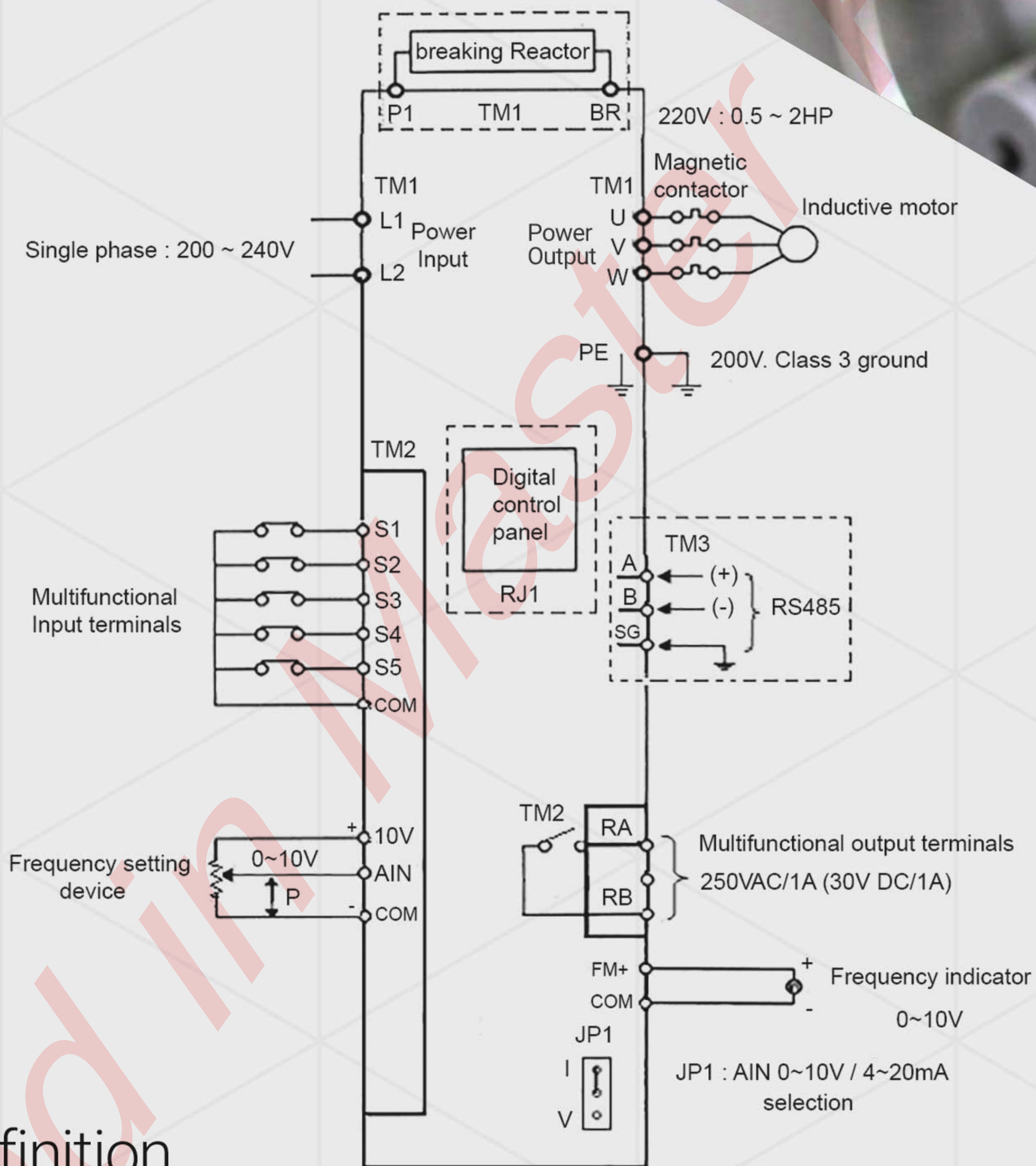


Applications

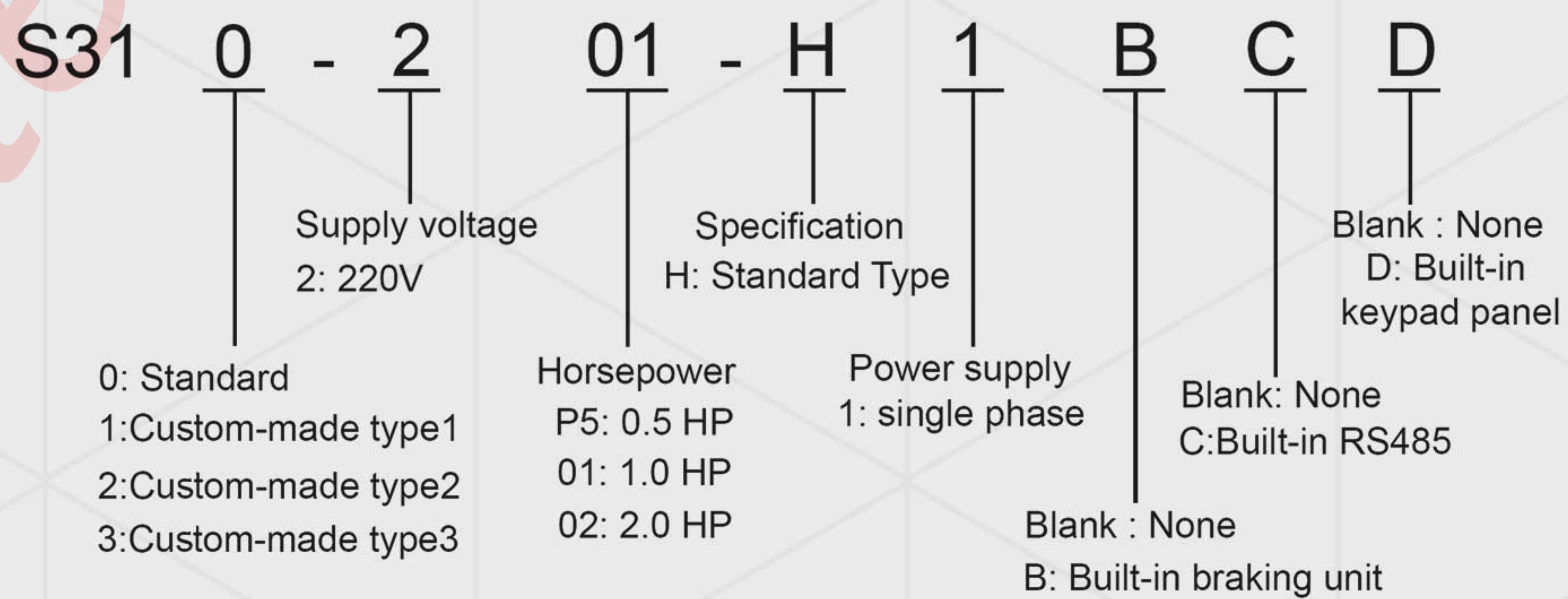
- فن • Fan
- نوار نقاله • Conveyor
- صنعت پخت • Baking industry
- موتور اسپیندل • The spindle motor
- ماشین بافندگی • Knitting machine
- صنعت طلا و فلز • Gold and metal industry
- صنعت بسته بندی • Packaging Industry



▶ Wiring Diagram



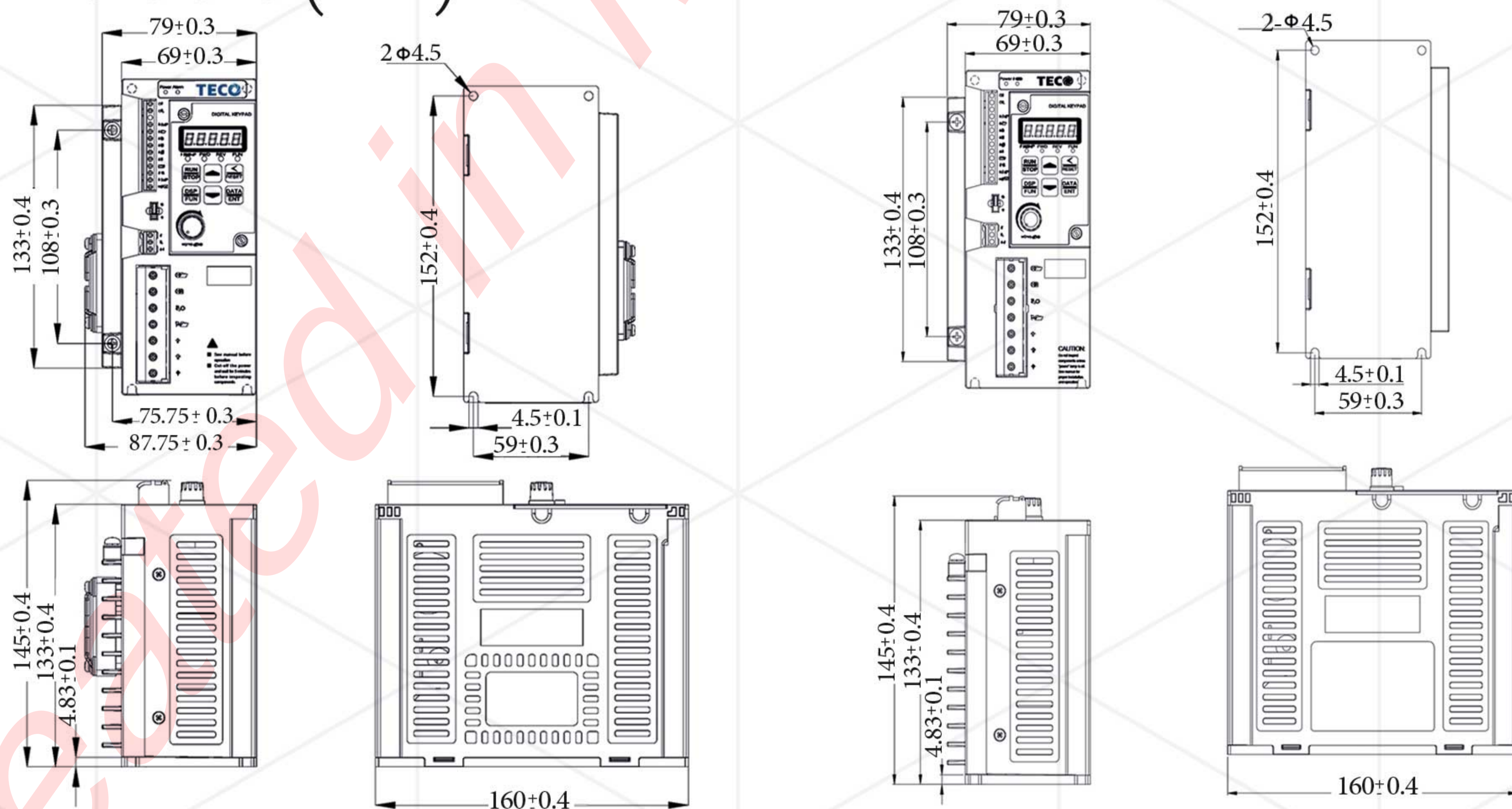
▶ Model Definition



General Specification

Item	S310 Type	
Control mode	V/F	
Frequency control	Range	0.01~400.00HZ
	Setting resolution	Digital:0.01HZ;analog:0.06HZ/60HZ(10 bits)
	Keypad setting	Set directly with ▲ ▼ keys or the VR on the keypad
	Display function	Five digital LED and status indicator;display frequency/inverter parameter/fault log/program version
	External signal setting	1:External potentiometer 0-10V/0-20mA 2:Speed control with multifunction contacts on the terminal block(TM2) 3:Pulse input
	Frequency limit function	Upper/Lower frequency limits
General control	Carrier frequency	1~12KHZ
	V/F pattern	6 fixable patterns,1 programable curve
	Acc/Dec control	Acc/Dec time(0.1~3600 Seconds)
	Multifunction input	4 function(refer to description on 2-12)
	Multifunction output	15 functions(refer to description on 01-00~04)
	Other function	7 function(refer to description on 01-09)
Communication control	Momentary power loss restart,overload detection,8 preset speeds,2/3-wire control,torque boost,slip compensation,frequency upper/lower limit,modbus slave and PC/PDA link,auto restart	
Braking torque	About 20%,standard model the specifed external braking resistor can provide 100%	
Operation temperature	14-120°F(-10~50°C)	
Storage temperature	4-140°F(-20~60°C)	
Humidity	0~95% relative humidity(None-condense)	
Vibration	1G(9.8 m/s ²)	
Enclosure	IP20	
Protective function	FUSE protection	The motor stops after FUSE melt
	Over voltage	200V class:DC voltage>410V
	Under voltage	200V class:DC voltage<190V
	Momentary power loss restart	Restart can be initiated with spain start after momentary loss in Max.2sec
	Other function	Over torque detection,error contact control,reverse prohibit,prohibit for direct start after power up and error recovery

Dimensions (mm)



•S310 202-H1BCD / D

•S310 2P5/201-H1BCD / D

► Technical Specifications

- خروجی گشتاور تا ۱۵۰٪ در فرکانس ۶ هرتز
- With auto torque boost ,150% torque output at 6HZ
- ورودی پالس (در برخی سری های این خانواده درایو به صورت سفارشی)
- Pulse input function
- مد کنترلی V/F
- V/F control mode
- قابلیت برقراری ارتباط شبکه RS485
- Built-in RS485 communication
- جدا شدن صفحه کلید توسط کابل شبکه RJ45
- Removable keypad with standard RJ45 interface
- تکنولوژی IPM میتسوبیشی
- Mitsubishi IPM technology
- حداکثر فرکانس خروجی تا ۴۰۰ هرتز
- Output frequency up to 400HZ
- دارای فن خنک کننده و محافظ حذف نویز از فن
- Natural cooling, eliminating noise from fan



S310 Series

► Product Specification

S310- □ □ □-XXX	2P5	201	202
Horsepower(HP)	0.5	1	2
Max Applicable Motor Output(KW)	0.4	0.75	1.5
Rated Output Current(A)	3.1	4.2	7.5
Rated Capacity(KVA)	0.88	1.60	2.9
Max.Input Voltage	Single Phase:200~240V+10%-15%,50/60HZ±5%		
Max.Output Voltage	Single Phase:200~240V		
Input Current(A)	5.4	10.4	16
Net Weight(KG)	0.97		1.07
Net Weight(KG)(keypad)	1.0		1.1
Allowable momentary power loss time(second)	1.0	1.0	2.0

01-2

E310⁺ Series

(2HP ~ 5HP) 220V / 380V

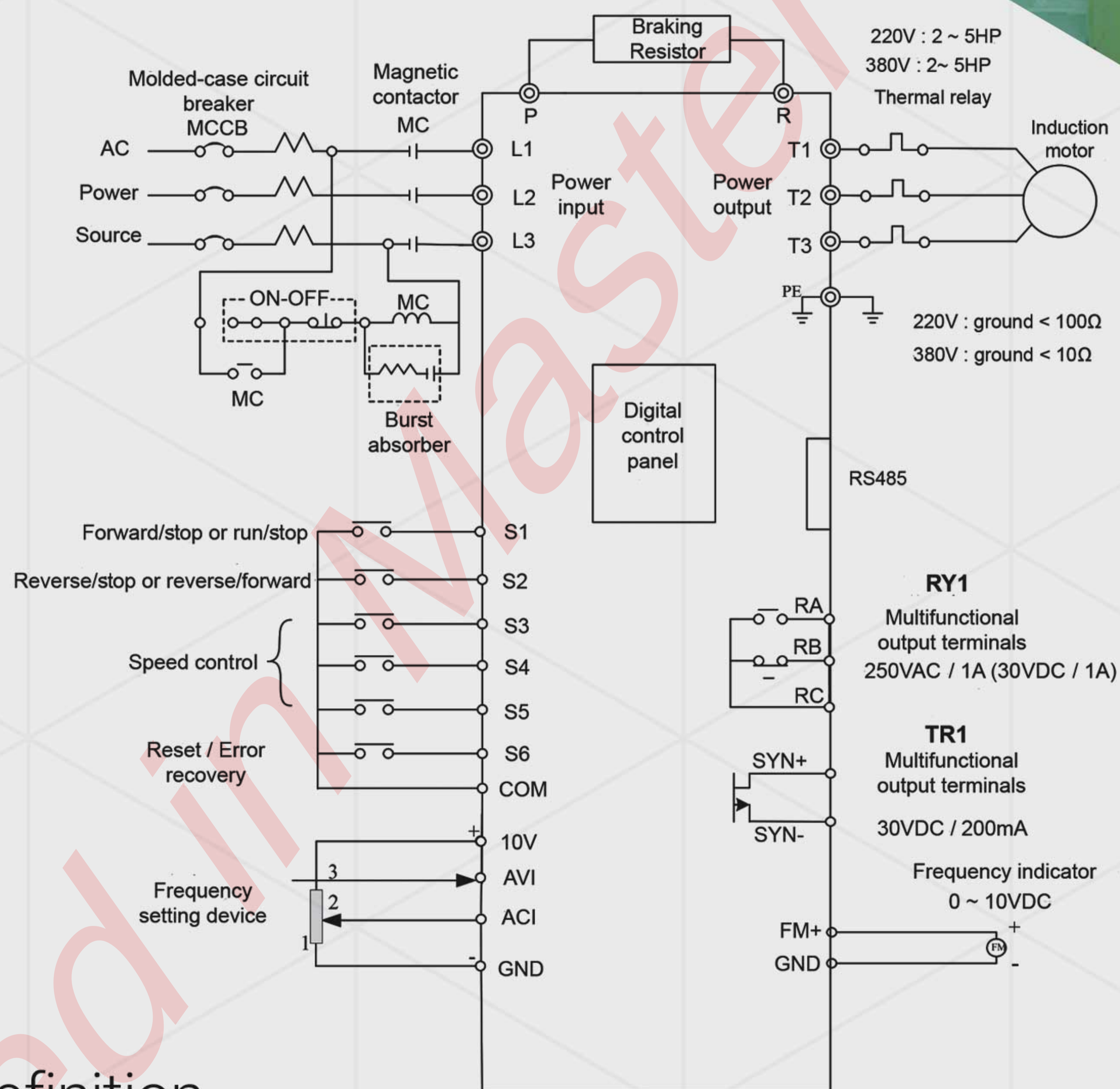


► Applications

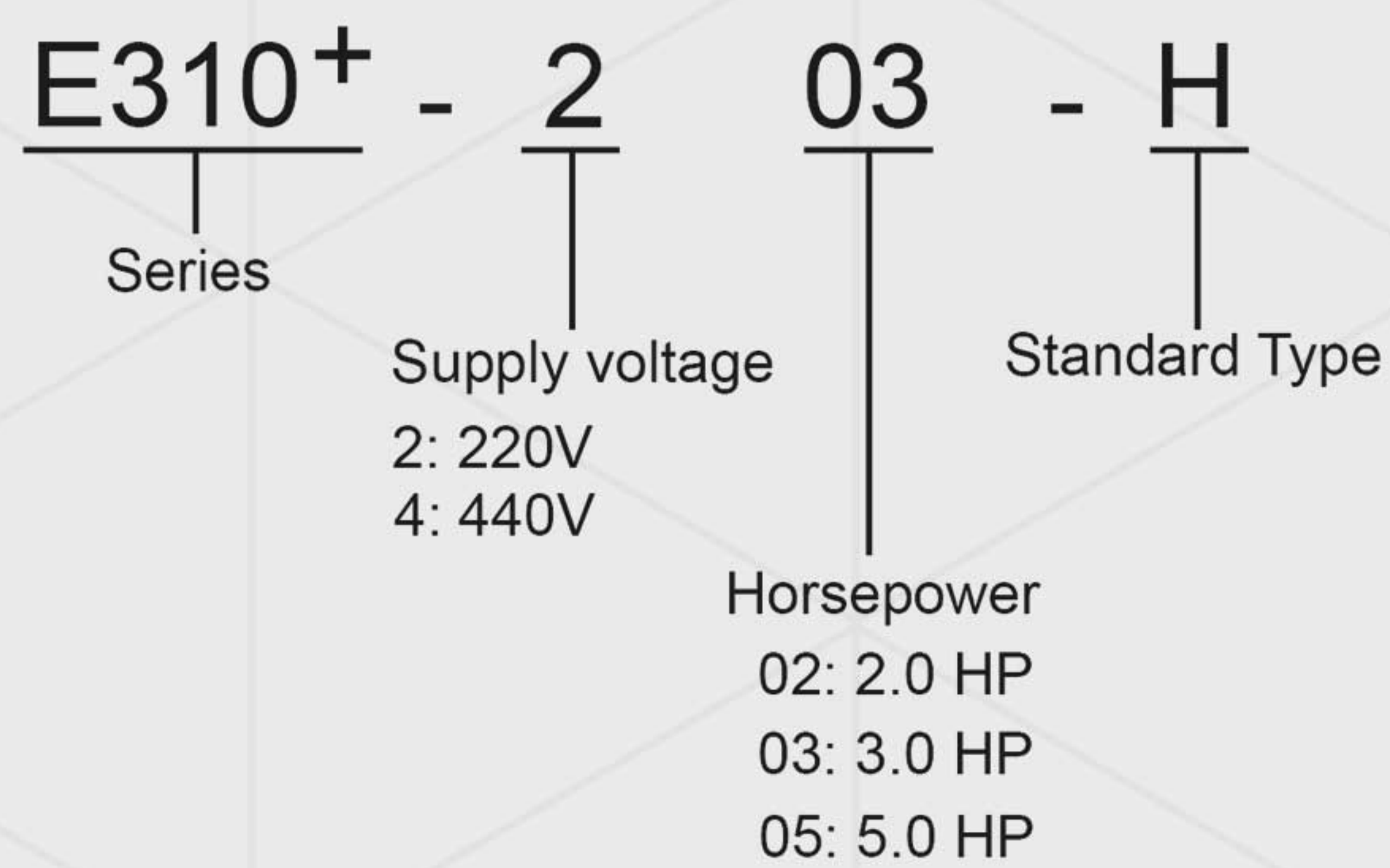
- فن • Fan
- میکسر • Mixer
- نوار نقاله • Conveyor
- سی ان سی • CNC
- صنعت پخت • Baking industry
- موتور اسپیندل • The spindle motor
- صنعت نساجی • Textile Industry
- صنعت سنگبری • Stone Industry
- صنعت طلا و فلز • Gold and metal industry
- صنعت بسته بندی • Packaging Industry
- سیستم تهویه ی هوا • Air conditioner system



▶ Wiring Diagram



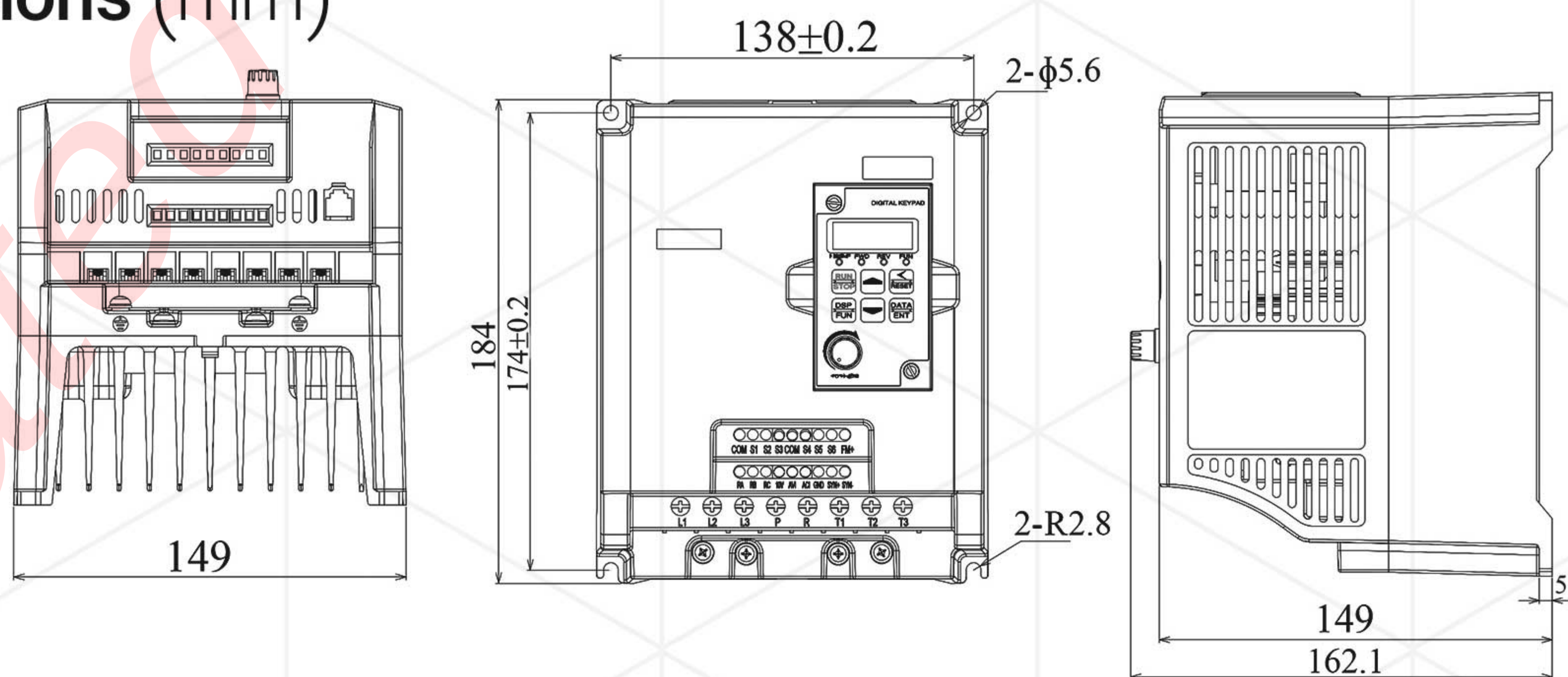
▶ Model Definition



General Specification

Item	E310+ Type	
Control mode	V/F or Vector Control	
Frequency control	Range	0.01~400.00HZ
	Start control torque	150% /1HZ(vector)
	Speed control range	1:100(vector)
	Speed control precision	±0.5%(vector)
	Setting resolution	Digital:0.01HZ,Analog:0.06HZ/60HZ(10 bits)
	Keypad setting	set directly with ▲ ▼ key or the VR on the keypad
	Display function	five digital LED and status indicator;display frequency/line speed/DC voltage/output voltage/current/rotation direction/inverter parameter/fault log/program version/heat sink temperature /PID feed back
	External signal setting	External potentiometer 0-10V/0-20mA provides up/down controls,speed control or automatic procedure control with multifunctional contacts on the terminal block(TM2)
	Frequency limit function	Upper/Lower frequency limits and three programmable skip frequencies
General control	Carrier frequency	1~15KHZ
	V/F pattern	18 fixed patterns,1 programmable curves
	Acc/Dcc control	Two-stage Acc/Dec time (0.1~3600 seconds)and four-stage S curve(refer to descriptions on 10-07)
	Multifunction analog output	5 functions(refer to description on 2-12)
	Multifunction input	23 functions(refer to description on 01-00~01-05)
	Multifunction output	14 functions(refer to description on 01-09~01-10)
	Other function	Momentary Power Loss Restart,Speed Search,Overload Detection,16 preset speeds. Acc/Dcc switch(2 stages),S curves,3-wire control,PID control,Torque Boost,Slip compensation,Frequency Upper/Lower Limit,Auto Energy Saving,Modbus Slave and PC/PDA Link,Auto Restart
Communication control	control by RS485 or RS232 one-to-one or one-to-many(RS485 only) control. BAUD RATE/STOP BIT/PARITY/bit can be set	
Braking torque	About 20%,the model below 20HP with built-in braking transistor and the specified external braking resistors 100%	
Operation temperature	14~120°F(-10~50°C)	
Storage temperature	4~140°F(-20~60°C)	
Humidity	0~95% Relative humidity(Non-condense)	
Vibration	1G(9.8 m/s ²)	
Enclosure	IP20	
Protective function	Overload protection	The relays to protect the motor(the curve can be set) and the inverter(150% /1min)
	Over voltage	200V class :DC voltage>410V 400V class :DC Voltage>820V
	Under voltage	200V class :DC voltage<190V 400V class :DC Voltage<380V
	Momentary power loss restart	Restart can be initiated with spin start after momentary power loss in Max.2sec
	Stall prevention	stall prevention for Acceleration/Deceleration/Operation
	Short-circuit output terminal	Electronic Circuit Protection
	Grounding fault	Electronic Circuit Protection
	Other function	Protection for overheating of heat sink,over torque detection,error contact control,revers prohibit,prohibit for direct start after power up and error recovery,parameter Lock up.

Dimensions (mm)



● E310+ 2~5HP

► Technical Specifications

- خروجی گشتاور تا ۱۵۰٪ در فرکانس ۱ هرتز
- With auto torque boost ,150% torque output at 1HZ
- PID کنترل
- PID control
- مدهای V/F و Vector
- V/F and Sensor Less Vector modes
- قابلیت برقراری ارتباط شبکه RS485
- Built-in RS485 communication
- جدا شدن صفحه کلید توسط کابل شبکه RJ45
- Removable keypad with standard RJ45 interface
- تکنولوژی IPM میتسوبیشی
- Mitsubishi IPM technology
- دارای فن خنک کننده و محافظ حذف نویز از فن
- Cooling by heat sink , eliminating noise from fan

E310⁺ Series



► Product Specification

Model:E310+-□□□	2002	2003	2005	4002	4003	4005
Horsepower(HP)	2	3	5	2	3	5
Max Applicable Motor Output(KW)	1.5	2.2	3.7	1.5	2.2	3.7
Rated Output Current(A)	7.5	10.5	17.5	3.8	5.2	8.8
Rated Capacity(KVA)	2.9	4.0	7.5	2.9	4.0	6.7
Max Applicable Motor Output(KW)	Single/Three Phase:200~240V +10%-15%,50/60HZ±5%			Three phase:380~480V +10% -15%,50/60HZ±5%		
Max.Output Voltage	Three Phase:200~240V			Three phase:380~480V		
Net Weight(KG)	2.5	4.0	4.0	2.5	3.8	4.0
Allowable momentary power loss time(second)	2.0	2.0	2.0	1.0	2.0	2.0

01-3

T310 Series

(2HP ~ 215HP) 380V

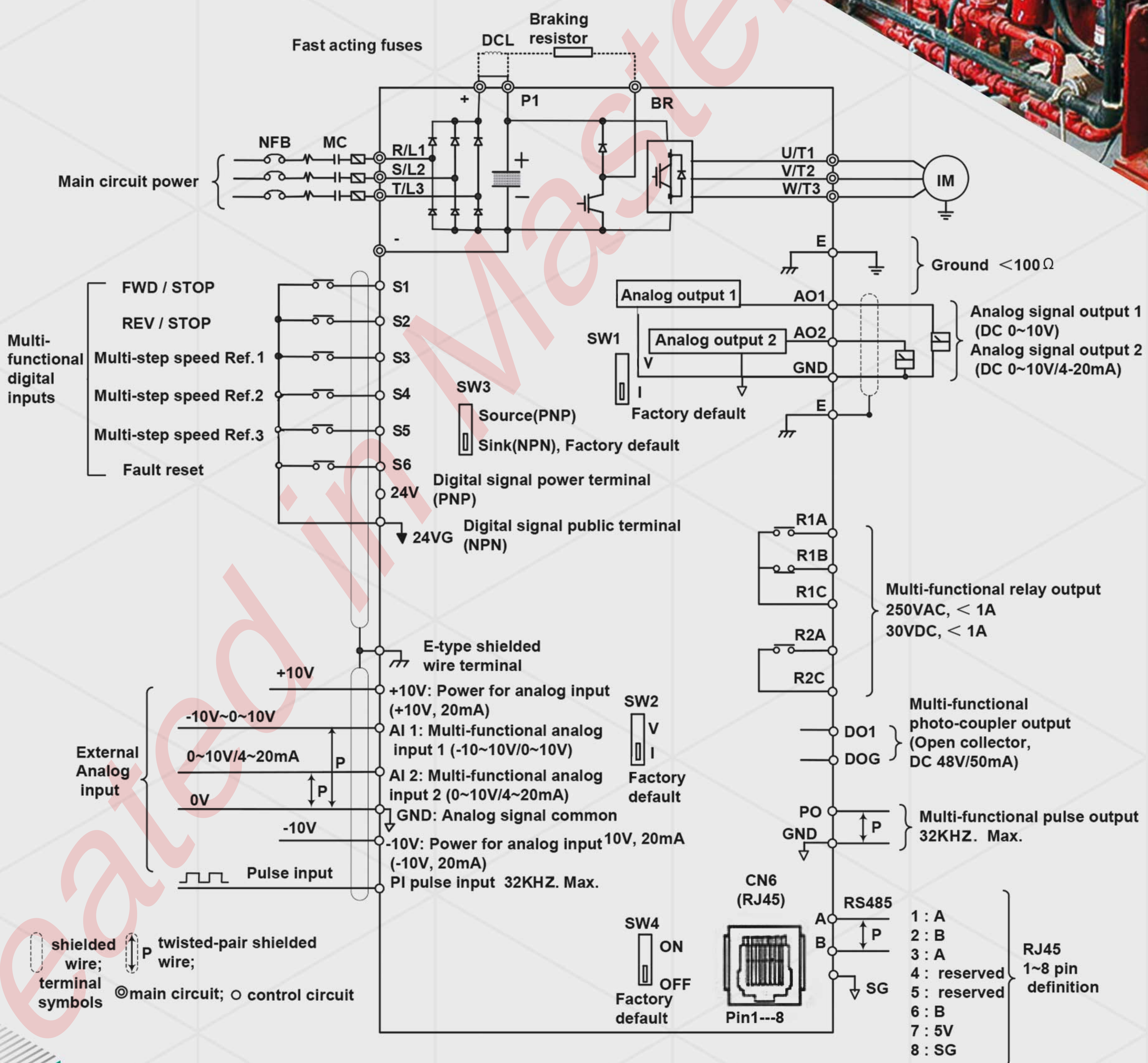


Applications

- میکسر • Mixer
- نوار نقاله • Conveyor
- جرثقیل • Crane
- صنعت سنگ • Stone Industry
- اکسترودر • Extruder
- سی ان سی • CNC
- آسیاب • Grinding mill
- صنعت معدن • Mining industry
- صنعت نساجی • Textile Industry
- سیستم تهویه هوا • Air conditioning system



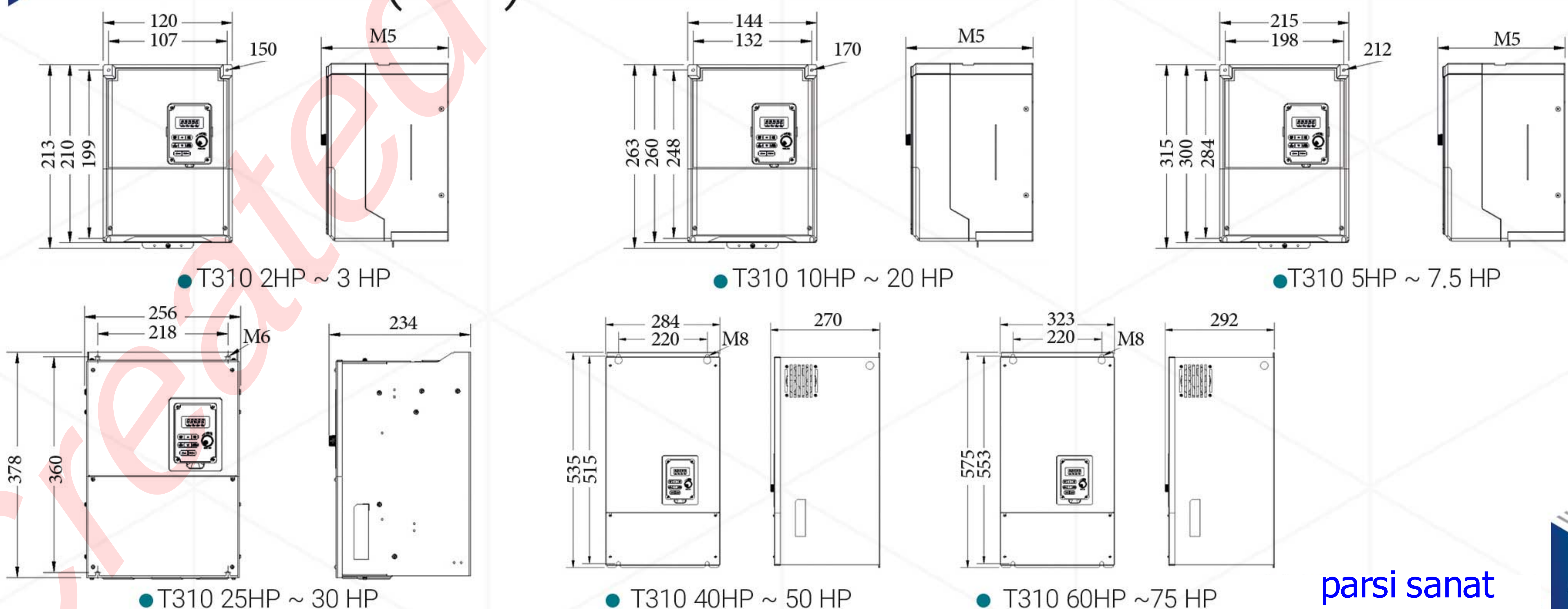
▶ Wiring Diagram



General Specification

Item	T310 type	
control characteristics	Operation mode	LCD keypad with parameter copy function(Optional Seven-segment display 5+LED keypad)
	Control mode	V/F,SLV,SLV2 with space vector PWM mode
	Frequency control range	0.1HZ~599.0HZ
	Output frequency accuracy (Temperature change)	Digital references:±0.01%(-10 to +40°C) Analog references:±0.1%(25°C±10°C)
	Speed control accuracy	±0.5%(vector control/open-loop)
	Frequency setting resolution	Digital references:0.01HZ,Analog references:0.03HZ/60HZ(If the maximum output frequency of motor is over 300HZ,the frequency resolution is changed to 0.1HZ)
	Output frequency resolution	0.01HZ(If the maximum output frequency of motor is over 300HZ,the frequency resolution is changed to 0.1HZ)
	Inverter overload	Rated output current 150%/1min
	Frequency setting signal	0 to +10VDC/4 to 20mA or -10V to +10VDC and pulse input command frequency
	Acceleration/deceleration time	0.1- 6000.0 second(separately set acceleration and deceleration time)
	Voltage,frequency characteristics	Custom V/Fcurve based on parameters
	Braking torque	±20%
	Main control function	Auto-tuning,Soft-PWM,over-voltage protection,dynamic braking,speed search,frequency traversing, instantaneous power fault restart,PID control,automatic torque compensation, automatic speed regulation, RS-485 communication standard,2 sets of analog outputs,safety switch.
	Other functions	Accumulated power-on/run time,4 sets of fault history records and latest fault record state, energy-saving function setting,single phase protection,smart braking,DC braking,Dwell,S curve acceleration and deceleration,Up/Down operation,MODBUS protocol,pulse output, engineering units,SINK/SOURCE digital inputs.
	Protection function	Stall protection
Instantaneous over current(OC) and output short-circuit(SC) protection		Inverter stops when the output current exceeds 200% of the inverter rated current.
Inverter overload Protection(OL2)		Inverter rated current 150%/1 min., factory default carrier frequency setting is 2~8kHz.
Motor overload(OL1) protection		Electrical overload protection curve I ² T
Over voltage(OV) protection		If the main circuit DC voltage rises over 820V(380V class),the motor stops running.
Under voltage(UV)		If the main circuit DC voltage falls below 380V(380V class),the motor stops running.
Automatic restart after Instantaneous power fault		Power fault exceeds 15ms,Automatic restart function available after instantaneous power fault in 2sec.
Overheat protection(OH)		Uses temperature sensor for protection.
Ground Fault protection(GF)		Use current sensor for protection.
DC bus charge indicator		When main circuit DC voltage ≥50V,the CHARGE LED turns on.
Environment Specification	Output Phase Loss Protection(OPL)	If the OPL is detected the motor stops automatically.
	Location	Indoor(protected from corrosive gases and dust).
	Ambient temperature	-10~+40°C(14°F~104°F) (IP20),-10~+50°C(14°F~122°F) (IP00) without de-rating;with de-rating,its maximum operation temperature is 60°C(140°F)
	Storage temperature	-20~+70°C(-4°F~+158°F)
	Humidity	95% RH or less(no condensation)
Altitude and vibration	Altitude of 1000m(3181ft) or below;1.0G,IEC60068-2-6	
Communication function	RS-485 standard(MODBUS RTU/ASCII protocol)	
EMI protection	The built-in noise filter complies with EN61800-3 available for inverters.	
EMS protection	EN61800-3	

Dimensions (mm)

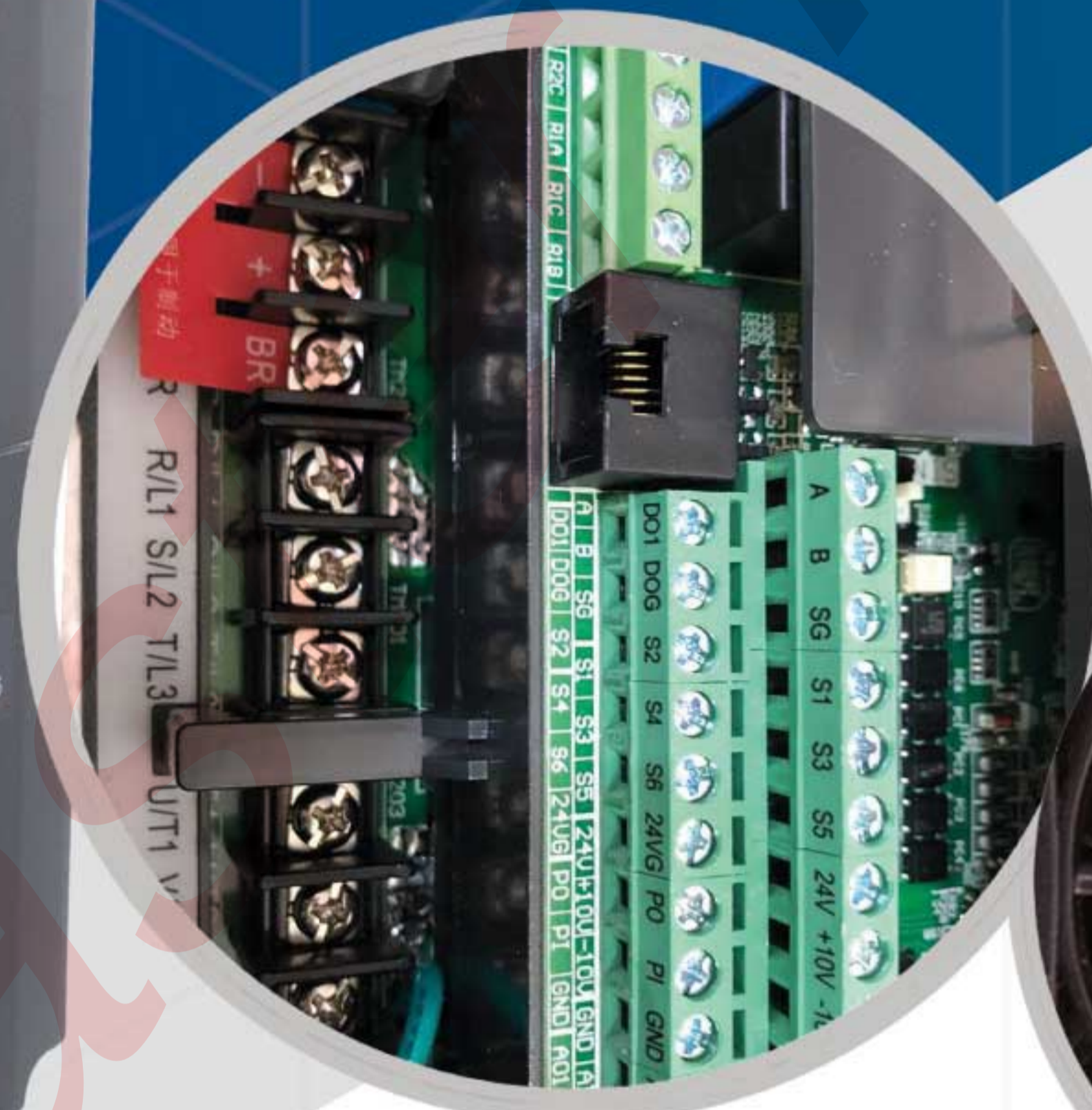


Technical Specifications

- V/F & Sensor Less Vector control modes
- گشاور راه اندازی و حین کار بالا
- Attains high levels of torque
- Select matching application type for quick setting of parameter defaults
- دارای تنظیم پارامترهای پیش فرض برای کاربردهای مختلف
- Advanced regenerative energy handling capabilities with overvoltage suppression
- قابلیت تشخیص و مدیریت ولتاژ برگشتی
- Extensive Monitoring and Display capabilities
- قابلیت های نمایشی و مانیتورینگ گسترده
- Auto tuning motor parameters capabilities
- قابلیت تنظیم خودکار پارامتر های موتور
- Pulse Width Modulation (PWM) technology that reduces motor noise
- تکنولوژی مدولاسیون پهنای باند برای کاهش هرچه بیشتر نویز موتور
- Built-in RS485 communication
- ارتباط شبکه RS485



T310 Series



Product Specification

Inverter capacity(HP)	1	2	3	5	8	10	15	20	25	30	40	50	60	75	100	125	150	175	215
Rated output capacity(KVA)	2.6	3.2	4.2	7	11.3	13.7	18.3	23.6	29.7	34.3	45.7	57.2	69.3	89.9	114	137	165	198	225
Rated output current(A)	2.3	4.2	5.5	9.2	13	18	24	31	39	45	60	75	91	118	150	180	216	260	304
Maximum applicable motor HP(KW)	1 (0.75)	2 (1.5)	3 (2.2)	5 (4)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)	50 (37)	60 (45)	75 (55)	100 (75)	125 (90)	150 (110)	175 (132)	215 (160)
The maximum output voltage(V)	3-phase 380V~440V																		
The maximum output frequency(HZ)	Based on parameter setting 0.1~599.0HZ																		
Rated voltage, frequency	3-phase 380V~440V 50/60HZ																		
Allowable voltage fluctuation	-15%~+10%																		
Allowable frequency fluctuation	±5%																		

01-4

F510 Series

(5HP ~ 425HP) 380V



► Applications

• درایو تخصصی فن و پمپ • Special Drive for fan and pump
• سایر کاربردهای سبک صنعتی • Other industrial light applications

RoHS CE cUL US

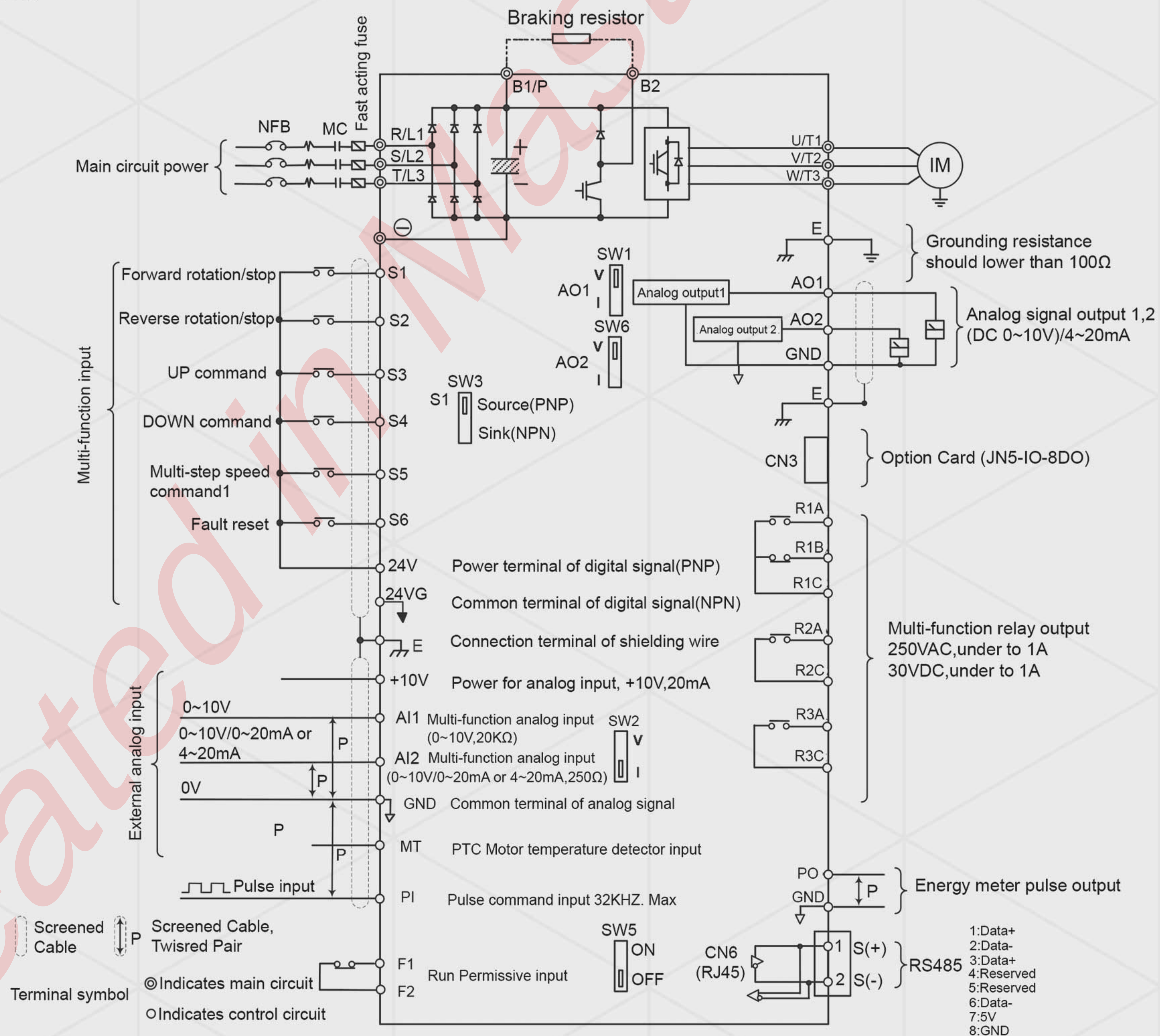
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15

Wiring Diagram

طراحی F510 به صورت ماژولار با قابلیت جداسازی صفحه نمایش، کارت های ارتباطی، فن های مجزا و ... به منظور دستیابی به سطوح بالاتری از حفاظت و سهولت در تعمیرات و نگهداری می باشد.

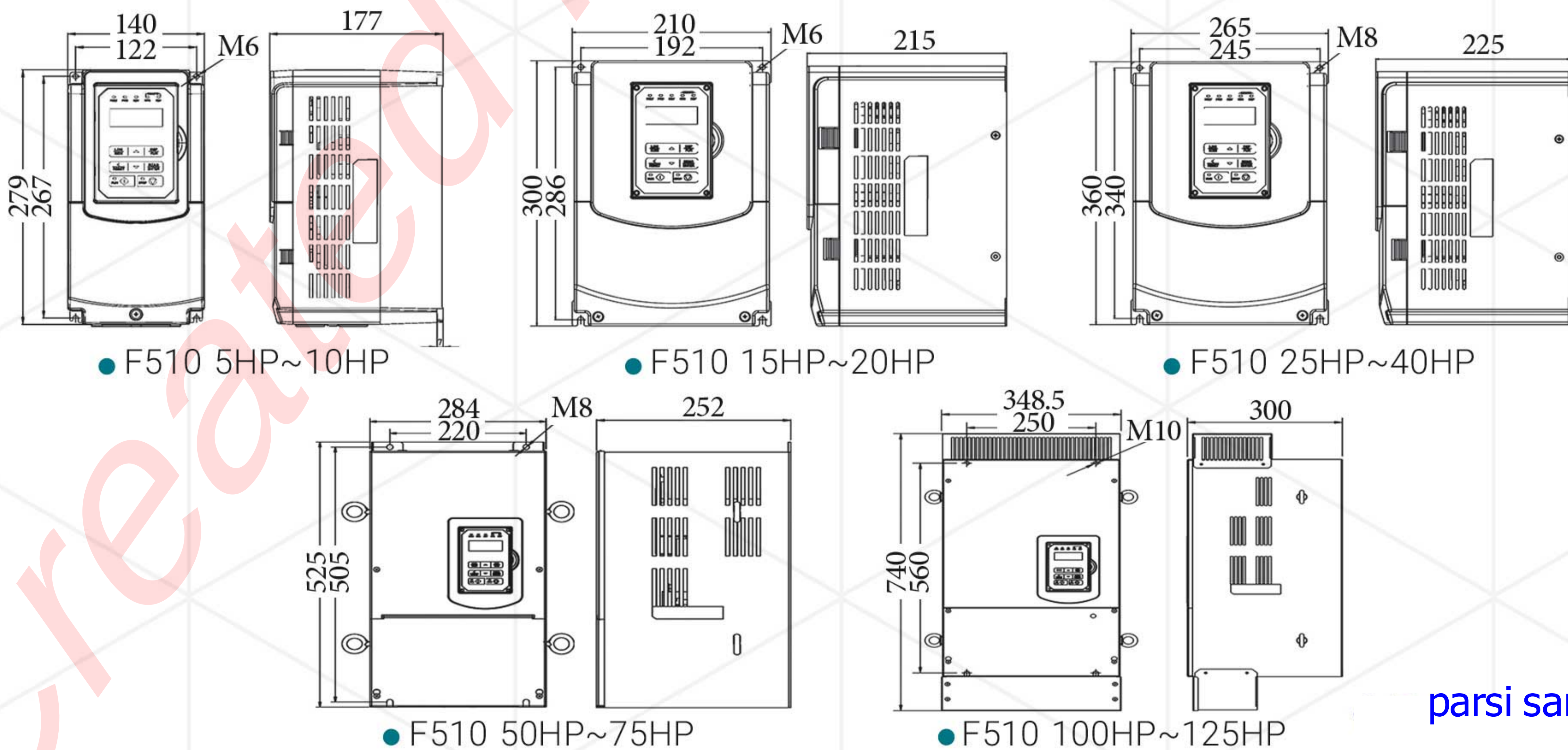
F510 has unique modular design, this provide higher protection level and easier maintenance .the design includes hot plug display, interface cards, removable fans and etc.



General Specification

Item		F510 Type
Control Characteristics	Display	LED keypad with 5-digits seven-segment display or LCD keypad(HOA LCD keypad option) all LCD Keypad with parameter copy function
	Control Modes	V/F,SLV,PMSLV with Space Vector PWM Mode
	Output Frequency	0.1HZ~400.0HZ
	Frequency Accuracy	Digital references:±0.01%(-10~+40°C),Analog references:±0.1%(25°C±10°C)
	Speed Control Accuracy	±0.5%(sensor less vector control mode)
	Frequency Setting Resolution	Digital references:0.01HZ,Analoge references:0.06HZ/60HZ
	Output Frequency Resolution	0.01HZ
	Overload Tolerance	120%/1min
	Frequency Setting Signal	DC 0~+10V/-10V~+10V or 4~20mA
	Acceleration/Deceleration Time	0.0~6000.0 second(separately set acceleration and deceleration time)
	Voltage/Frequency Characteristics	can arbitrarily set V/F curve based on parameters
	Braking Torque	About 20%
	Main Control Functions	
Other Functions		Records of power on and operation time,4 fault history records and latest fault record state,energy-saving Function,phase Loss protection,smart braking,DC braking,Dwell,S curve acceleration and deceleration,Up/Down operation,MODBUS,BACNet MS/TP,and metasys N2 communication protocol,display of multi-engineering unit,local/remote switch,SINK/SOURCE input selection,user parameter settings
Protection function	Stall Protection	Current level can be set(in acceleration or constant speed,it can be separately. In deceleration,it can be set with or without protection)
	Over Current(OC) and Output Short-Circuit(SC) Protection	It stops when the current exceeds 160% of the inverter rated current
	Inverter Overload Protection(OL2)	Inverter will be stopped when the output higher than 120% rated current for 1min,carrier frequency is 2~4KHZ
	Motor Overload Protection(OL1)	Electrical overload protection curve
	Over Voltage Protection(OV)	If the main circuit DC voltage is over 410V(220V class)/820V(440V class),the motor stops runing
	Under Voltage Protection(UV)	If the main circuit DC voltage is under 190V(220V class)/380V(440V class),the motor stops runing
	Momentary Power Loss Restart	Power loss exceeds 15ms. You can set the function of momentary power loss restart up to 2sec
	Overheat Protection(OH)	Thermistor sensor on heat sink
	Ground Fault Protection(GF)	protection by current detection circuit
	Charge Indicator	when main circuit DC voltage ≥50V,the CHARGE LED is on
	Output Phase Loss Protection(OPL)	If the OPL function acts,the motor stops rotation automatically
Environment specification	Location	Indoor (protected from corrosive gases and dust)
	Ambient Temperature	-10~+40°C(IP20/NEMA1),-10~+50°C(IP00),with de-rating,maximum operation temperature is 60°C
	Storage Temperature	-20~+70°C
	Humidity	95% RH or less(no condensation)
	Altitude and Vibration	Altitude of 1000 meters or lower,below 5.9m/s ² (0.6G)
Communication Function	Built-in RS-485 as standard (Modbus protocol with RJ45/BACNet/Metasys N2)	
PLC Function	Built-in	
Electromagnetic Interference(EMI)	Meet EN61800-3 Standard,IP20 400V 75HP or below and IP55 400V 60HP can be built in	
electromagnetic Susceptibility(EMS)	Meet EN61800-3 Standard	
Option Card	1 to 8 pump card,HOA LCD keypad,Profibus card	

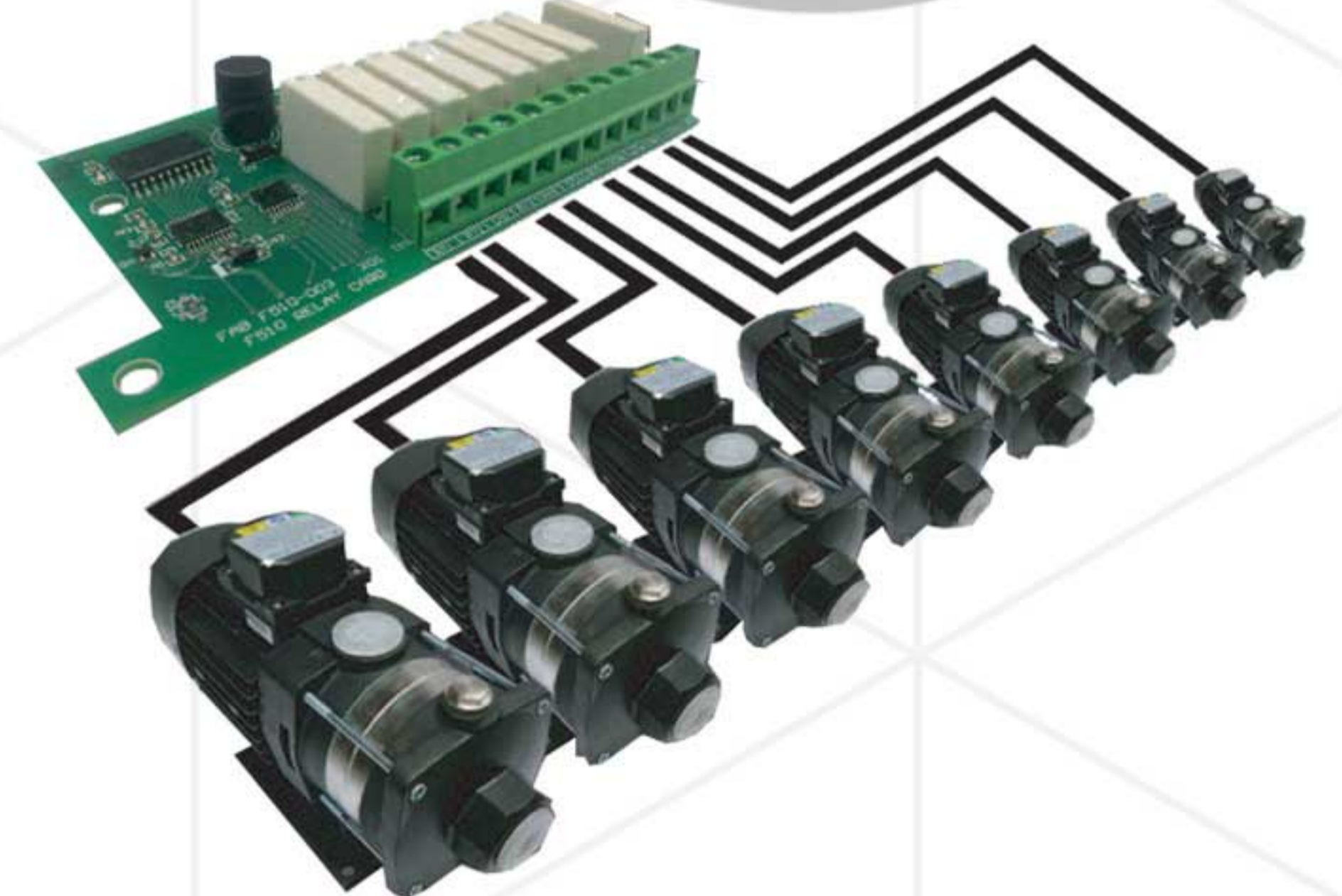
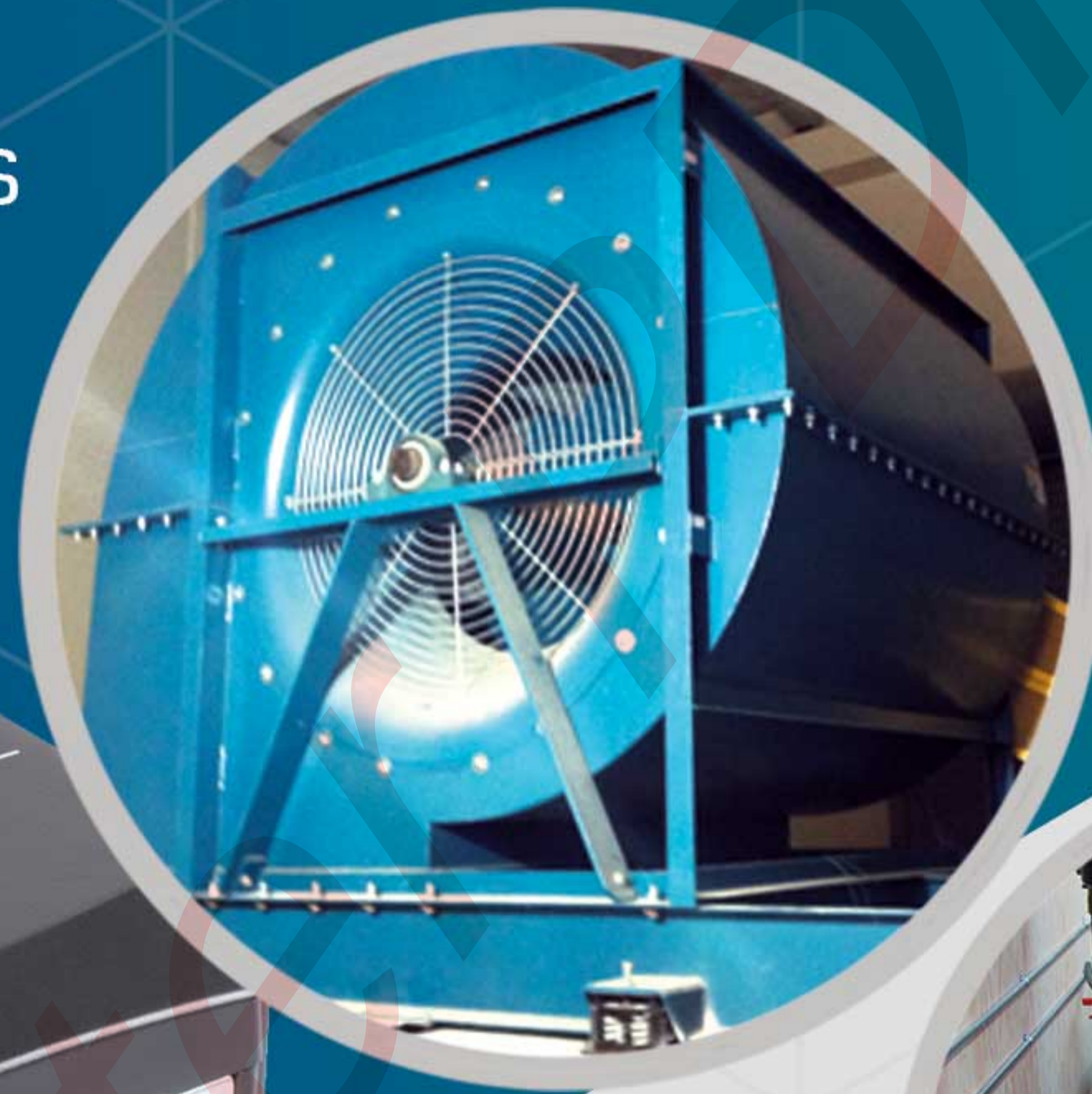
Dimensions (mm)



Technical Specifications

- خروجی گشتاور تا ۱۲۰٪ در فرکانس ۱ هرتز
- With auto torque boost ,120% torque output at 1HZ
- ورودی و خروجی پالس
- Pulse input and output
- مدهای کنترلی V/F و Sensor Less Vector
- V/F and Sensor Less Vector control modes
- قابلیت ارتباط RS485
- Built-in RS485 communication
- PID کنترل
- PID control
- قابلیت جدا شدن صفحه کلید به وسیله ی کابل RJ45
- Removable keypad with standard RJ45 interface
- اتصال به شبکه PROFIBUS
- Modbus built-in (profibus optional)
- قابلیت تنظیم خودکار براساس شرایط پمپ
- the ability of Automatic adjustment according to pump conditions
- قابلیت اتصال کارت جهت کنترل ۸ پمپ به صورت آبشاری
- the ability of connection of a special card in order to use 8 pumps in a cascades method

F510 Series



Product Specification

Inverter capacity(HP)	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	175	215	250	300	375
Rated Output Capacity(KVA)	7.0	8.4	13.3	17.5	23.6	28.9	33.5	41.1	54.8	67	78.4	110	125	158	190	225	250	331	392
Rated Output Current(A)	9.2	12.1	17.5	23	31	38	44	58	73	88	103	145	168	208	250	296	328	435	515
Maximum Applicable Motor HP(KW)	5 (3.7)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)	50 (37)	60 (45)	75 (55)	100 (75)	125 (90)	150 (110)	175 (132)	215 (160)	250 (185)	300 (220)	375 (280)
Maximum Output Voltage(V)	3-phase 380V~480V																		
Maximum Output Frequency (HZ)	Based on parameter setting 0.1~400.0 Hz																		
Rated Voltage,Frequency	3-phase 380V~480V,50/60Hz																		
Allowable Voltage Fluctuation	-15%~+10%																		
Allowable Frequency Fluctuation	±5%																		

01-5

A510 Series

(5HP ~ 500HP) 380V

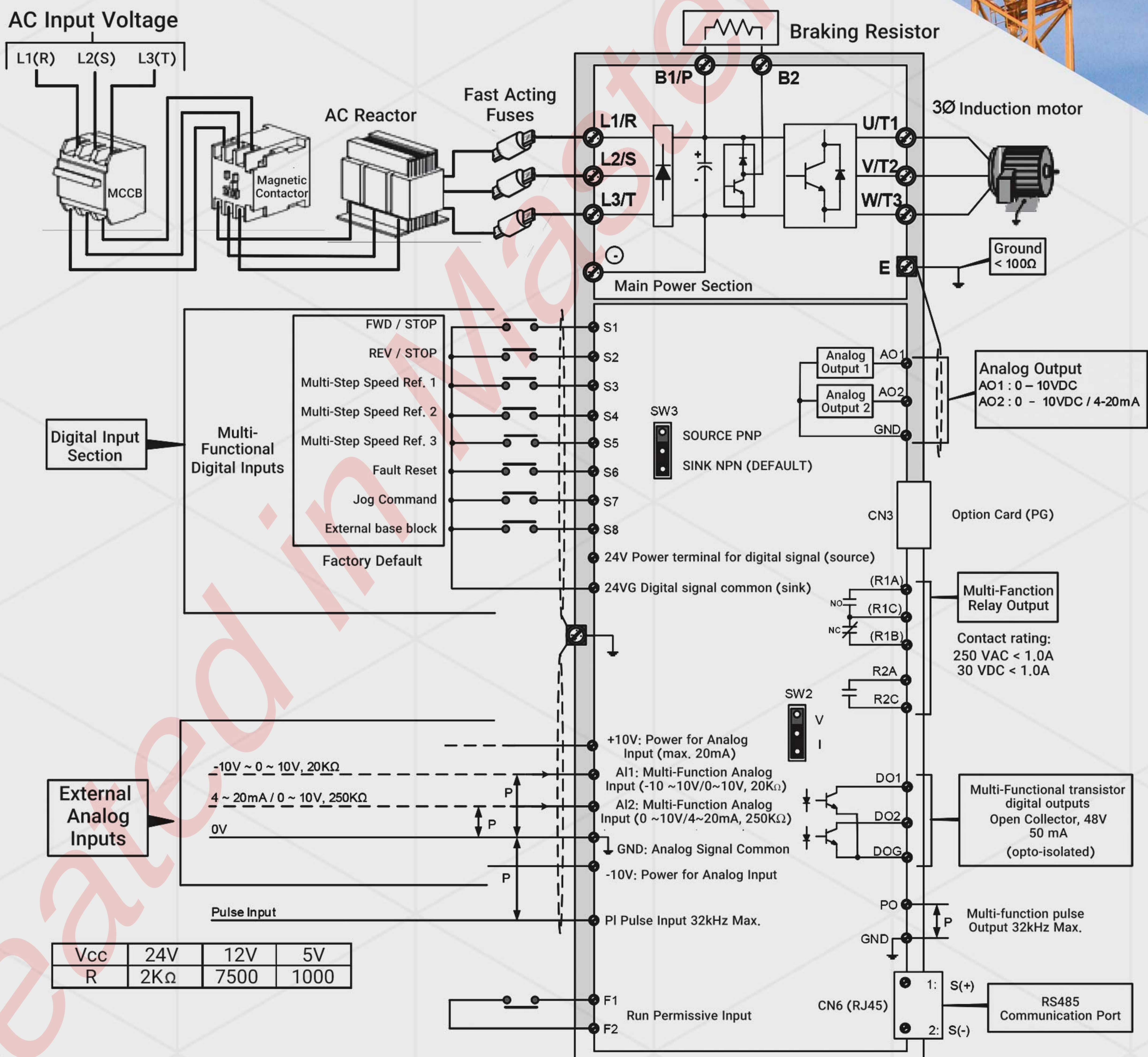


► Applications

- آسیاب • Grinding mill
- حفاری • Excavation
- میکسر • Mixer
- جرثقیل • Crane
- نوار نقاله • Conveyor
- کمپرسور • Compressor
- پله برقی • Escalator Excavation
- اکسترودر • Extruder
- سی ان سی • CNC
- صنعت معدن • Mining Industry
- صنعت سنگبری • Stone Industry
- ماشین های تزریق پلاستیک • Plastic injection machines



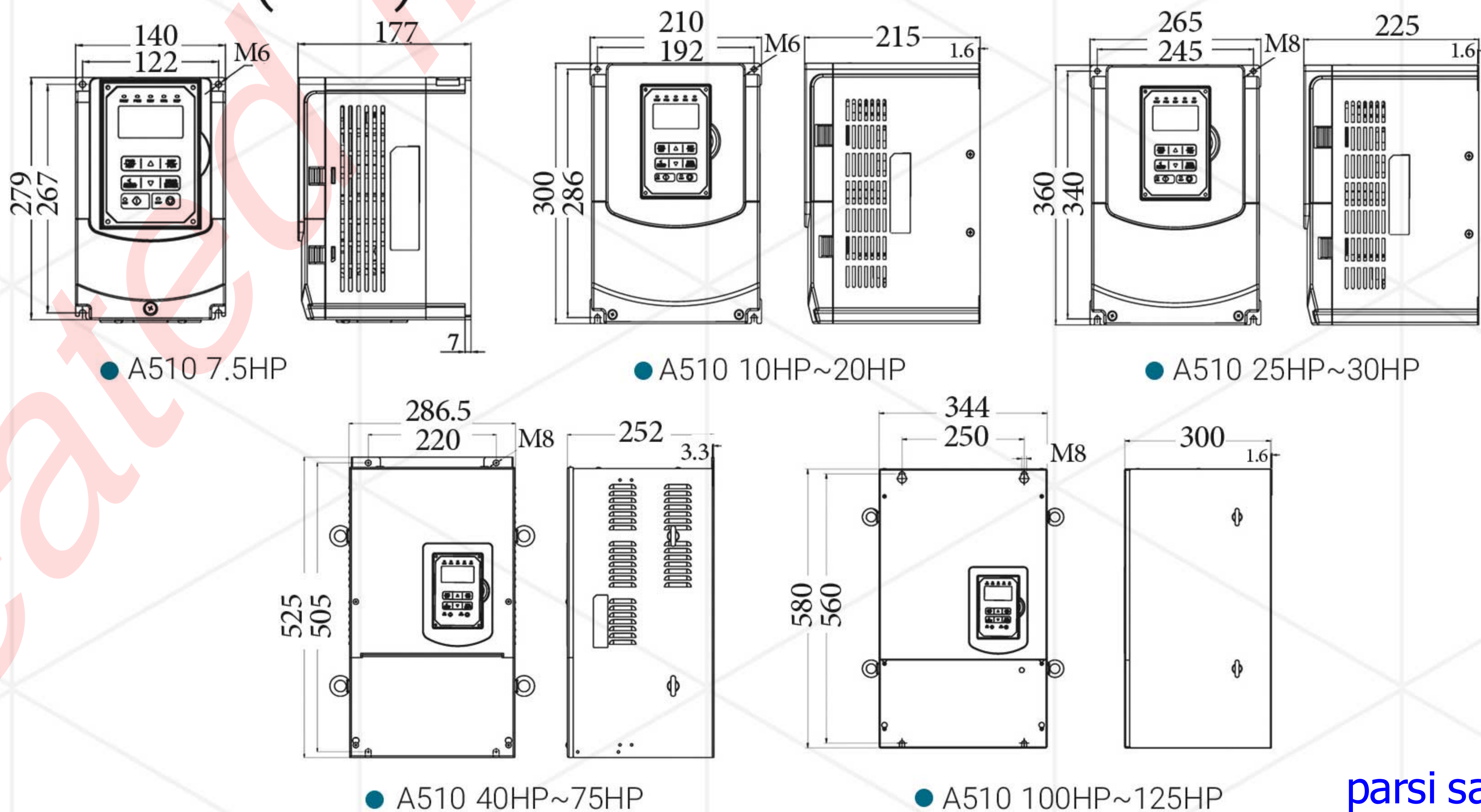
Wiring Diagram



General Specification

Item	A510 Type	
Control characteristics	Operation mode	Seven-segment display+LED keypad(it is allowable to buy LCD keypad with parameter copy function)
	Control mode	V/F,V/F+PG,SLV,SV,PMSV,PMSLV with space vector PWM mode
	Frequency control range	0.1HZ~400.0HZ(1200.0HZ)
	Frequency accuracy (temperature change)	Digital references:±0.01%(-10~+40°C),Analog references:±0.1%(25±10)°C
	Speed control accuracy	±0.1%(vector control(SV)),±0.5%(vector control without sensor)
	Frequency setting resolution	Digital references:±0.01,Analog references:0.06HZ/60HZ
	Output frequency resolution	0.01HZ
	Overload tolerance	Rated output current 200%/2sec 150%/1min,200%/2sec(N.D mode),factory setting of 150%/1min.
	Frequency setting signal	DC 0~+10V/4~20mA or DC -10V~+10V and pulse-type command frequency
	Acceleration/deceleration time	0.0~6000.0 second(separately set acceleration and deceleration time)
	Voltage,Frequency characteristics	Can arbitrarily set V/F curve based on parameters
	Braking torque	About 20%
	Main control functions	Auto tuning,zero servo,torque control,position control,Droop,Soft-PWM,over-voltage protection, dynamic braking,speed search frequency traversing,instantaneous power fault restart,PID control, automatic torque compensation,slide difference compensation,RS-485 communication standard,speed feedback control,simple PLC function,2 sets of analog output,safety switch.
	Other function	Accumulated record of power supply time and operation time,4 sets of fault history record and the latest fault record state,energy-saving function setting,single phasing protection,smart braking,DC braking,Dwell,S curve acceleration and deceleration,Up/Down operation,MODBUS communication type,output of pulse multiple,display of any engineering unit,Local/Remote switching keys,SINK/SOURCE input interface option
Protection function	Stall protection	Action current can be set(in acceleration or constant speed,it can be set separately.in deceleration,it can be set with/without)
	Instantaneous over current(OC) and output short-circuit(SC) protection.	it stopes when the current exceeds 200% of the inverter rated curent.
	Inverter overload protection(OL2)	Inverter rated current is 150%/1min, in case of 200%/2sec,it stops(H.D .type),carrier of the factory setting is 2~8KHZ.
	Motor overload(OL1) protection	in case of 120%/1min,it stops(N.D.type).carrier of the factory setting is 2KHZ.
	Over voltage(OV) protection	Electrical overload protection curve
	Under voltage(UV) protection	if the main circuit DC voltage is over 410V(220V class)/820V(440V class),the motor stops running.
	Automatic restart after	if the main circuit DC voltage is under190V(220V class)/380V(440V class),the motor stops running.
	Instantaneous power fault	Power fault exceeds 15ms
	Overheat protection(OH)	You can set the function of automatic restart after instantaneous power fault in 2sec
	Ground fault protection(GF)	Use temperature detector for protection
	Protection in charge state	Use current detector for protection
	Output phase loss protection(OPL)	When main circuit DC voltage≥50V,the charge LED is on
	communication function	If the OPL function acts,the motor stops rotation automatically.
	PLC function	RS-485 standard with built-in(MODBUS)(RJ45)
EMI protection	Built-in	
EMS protection	The Added noise filter is in line with EN61800-3,400V 215HP or below can be built in.	
Option	Follows ENG61800-3	
	Open pole/wire drive/PM encoder feedback card.	

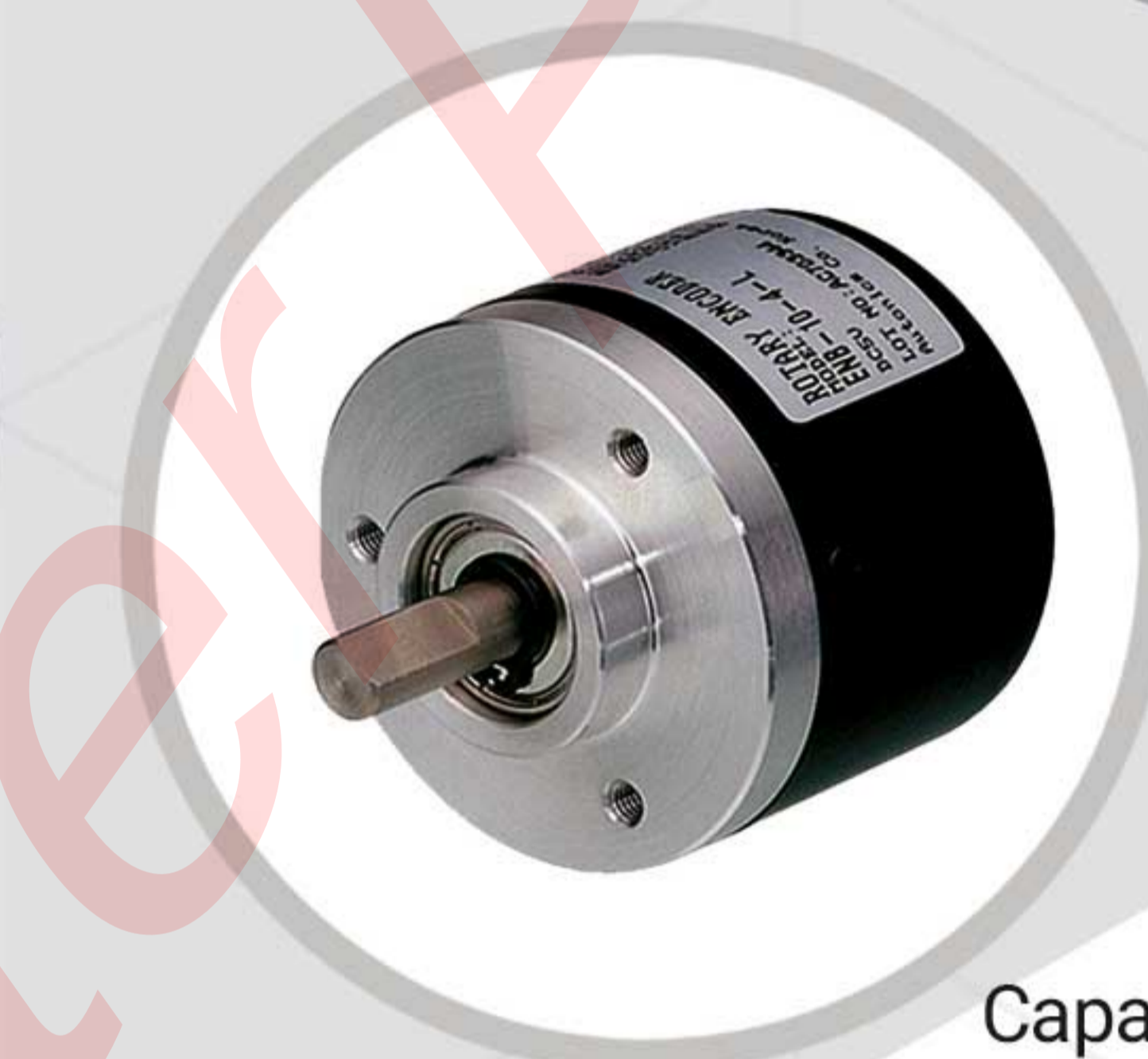
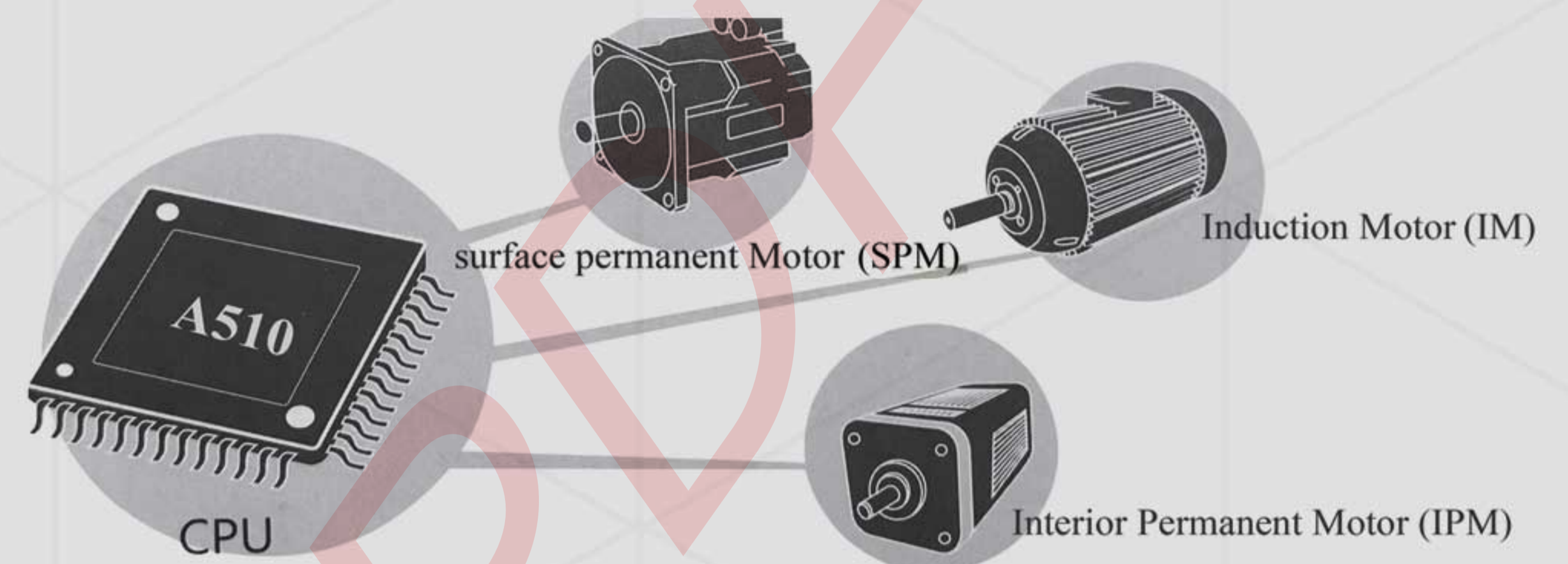
Dimensions (mm)



► Technical Specifications

- افزایش گشتاور تا ۲۰۰٪ در فرکانس ۰/۵ هرتز
- increase torque boost up to 200% at 0.5HZ
- قابلیت auto tune نمودن موتور زیر بار
- Advanced motor auto tune functions
- مدهای کنترلی V/F و Sensor Less Vector
- V/F and Sensor Less Vector control modes
- ارتباط شبکه RS485
- Built-in RS485 communication
- کنترل PID
- PID control
- قابلیت جدا شدن صفحه کلید با کابل شبکه RJ45
- Removable keypad with standard RJ45 interface
- پردازنده دو هسته ای، ۳۲ و ۱۶ بیتی و عملکرد پیشرفته Asic
- Dual core processors, 32 & 16 bit & Asic Enhanced performance
- ورودی و خروجی پالس تا ۳۲ کیلوهرتز
- Pulse input & output up to 32KHZ

A510 Series



Capable of driving IM/SPM/IPM



► Product Specification

Inverter capacity(HP)		7.5	10	15	20	25	30	40	50	60	75	100	125	
Output rated	Heavy Duty type H.D (150%/1min)	Rated output Capacity(KVA)	11.3	13.7	18.3	23.6	29.7	34.3	45.7	57.2	69.3	89.9	114	137
		Rated output current(A)	14.8	18	24	31	39	45	60	75	91	118	150	180
		Maximum applicable motor HP(KW)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)	50 (37)	60 (45)	75 (55)	100 (75)	125 (90)
		Motor rated current(A)	10.1	12.6	18.6	24.8	31.1	36.3	48.7	59	70.5	88	114	145
	Normal Duty type N.D. (120%/1min)	Rated output Capacity(KVA)	13.3	17.5	23.6	29.0	33.5	44.2	55.6	67.1	78.5	111	128	159
		Rated output current(A)	17.5	23	31	38	44	58	73	88	103	145	168	208
		Maximum applicable motor HP(KW)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)	50 (37)	60 (45)	75 (55)	100 (75)	125 (90)	150 (110)
		Motor rated current(A)	12.6	18.6	24.8	31.1	36.3	48.7	59	70.5	88	114	145	175
The maximum output voltage(V)		3-phase 380V~480V												
The maximum output frequency(HZ)		Based on parameter setting 0.1~400.0(1200.0)HZ												
Power	Rated voltage,frequency		3-phase 380V~480V,50/60HZ											
	Allowable voltage fluctuation		-15%~+10%											
	Allowable frequency fluctuation		±5%											

01-6

MA510 Series

(25HP ~ 175HP) 380V

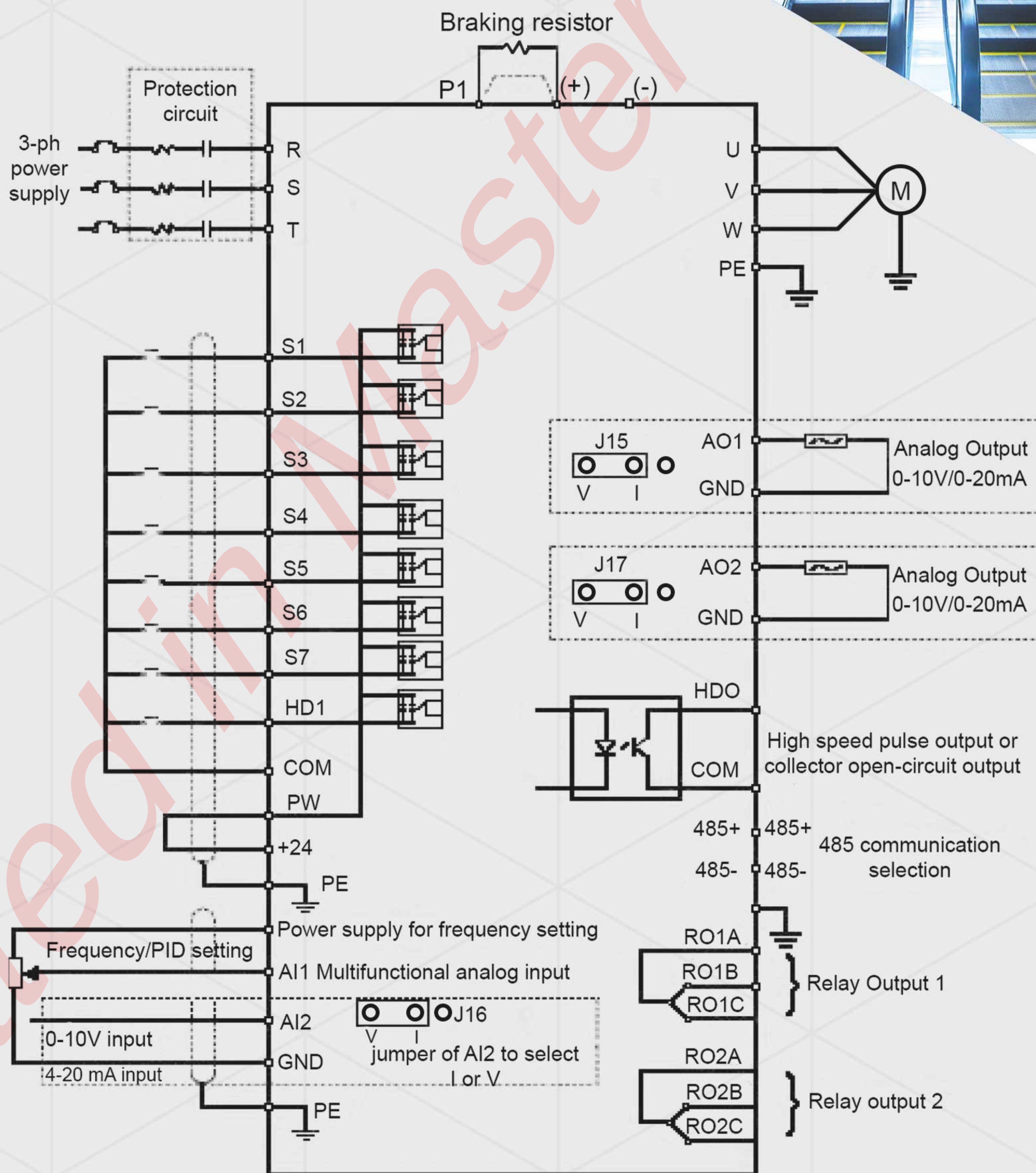


► Applications

- چیلر • Chiller
- آسیاب • Grinding mill
- میکسر • Mixer
- جرتقیل • Crane
- سی ان سی • CNC
- پله برقی • Escalator
- نوار نقاله • Conveyor
- صنعت سنگبری • Stone Industry
- اکسترودر • Extruder
- صنعت معدن • Mining Industry
- صنعت نساجی • Textile Industry
- سیستم تهویه ی هوا • Air conditioner system



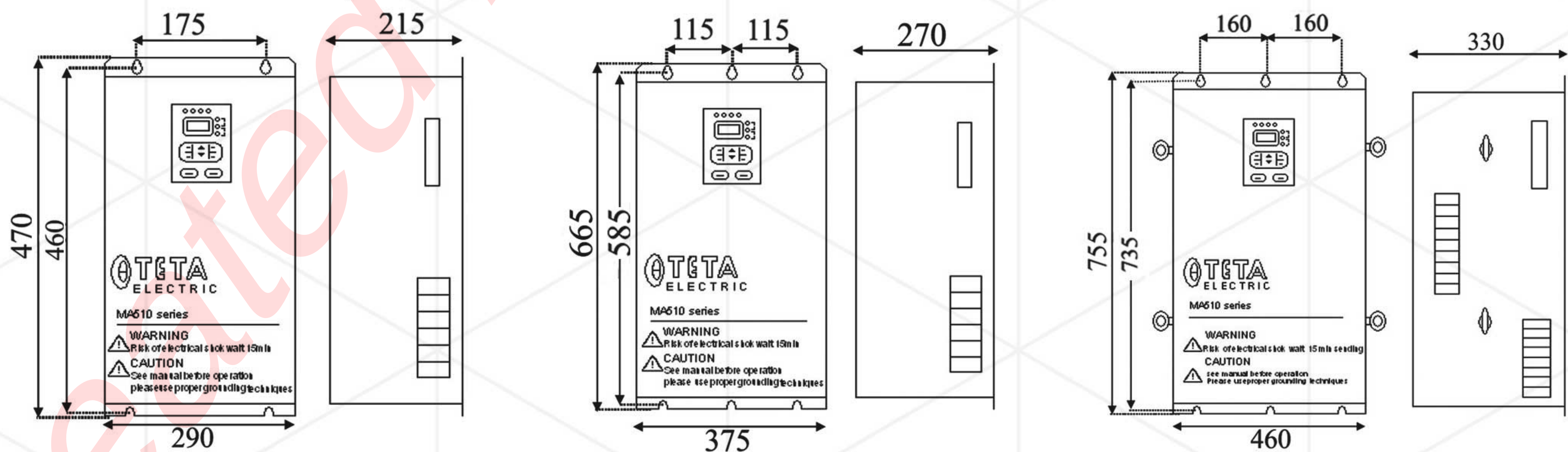
Wiring Diagram



General Specification

Item		MA510 Type
I/O features	Input Voltage range	380/220±15%
	Input Frequency range	47~63HZ
	Output Voltage range	0~rated input voltage
	Output Frequency range	0~600HZ
I/O terminals	Input Terminals	Programmable DI:7,1 high speed pulse programmable AI:2,AI1:-10V~10V,AI2:0~10V or 0~20mA
	Output Terminals	Programmable open collector output:1 (open collector or high speed pulse output selectable)
		Programmable relay output:2
	Communication Terminals	Programmable AI:2,0.4~20mA or 0~10V selectable
Control	Control Mode	Provide RS-485 communication interface,adopt Modbus-RTU communication mode.
	Control Mode	V/F control,sensorless vectore control(SVC)
Function	Speed Adjusting Range	1:100(SVC)
	Overload Capacity	150% rated current 60s,180% rated current 10s.
	Frequency Reference Source	Keypad,analog input,HDI,serial communication,multi-step speed,simple PLC and PID. The combination of multi-modes and the switch between different modes can be realized.
	Other Functions	Traverse control function
		PID control function
		Simple PLC,Multi-steps speed control function:16steps speed can be sets.
		None-stop when instantaneous power off.
Speed trace function:smoothly start the running motor		
Automatic voltage regulation function(AVR)		
Up to 23 fault protections:over current,over voltage,under voltage,over temperature phase failure,overload etc.		
Man-machine interface	LED Display	Can display:setting frequency,output frequency,output voltage,output current,etc.
	Multi-Function Key-press	The QUICK/JOG key-press can be used as multi-function key-press.
Environmentak constraint	Temperature	-10°C~40°C
	Humidity	<90%,without condensation
	Altitude	<1000m,output rated power >1000m,output power
	Electromagnetic radiation	The inverter is prohibited to be installed at the place where strong electromagnetic radiation may occur very probably.
	Store Environment	The inverter is prohibited to be stored at the place where whit direct sunlight,fall of oil mist,steam and whit heavy oscillation.

Dimensions (mm)



• MA510 25HP~40HP

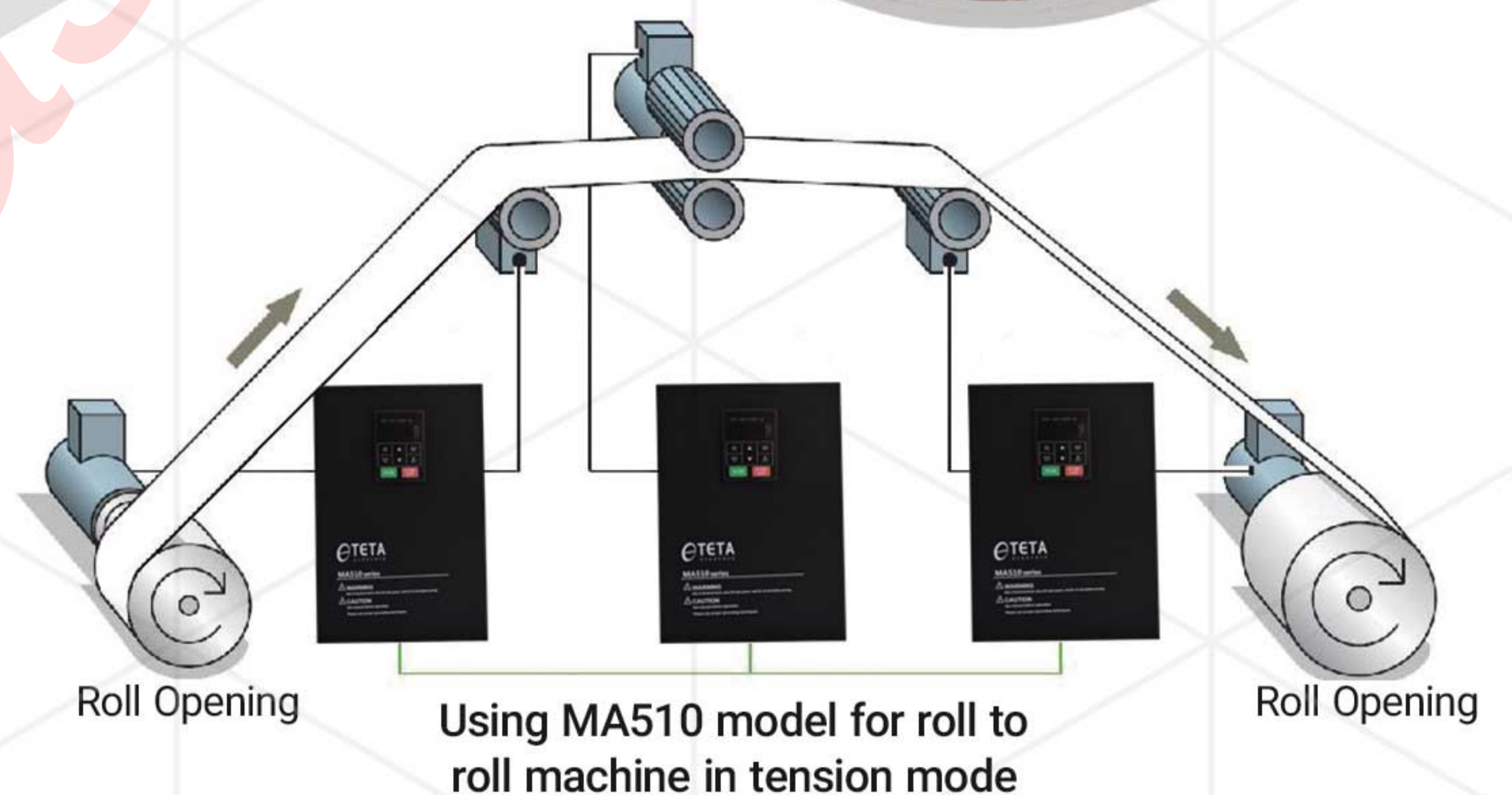
• MA510 50HP~75HP

• MA510 100HP~150HP

► Technical Specifications

- Increase torque boost up to 150% at 0.5HZ
- Pulse input & output up to 50KHZ
- V/F and Sensor Less Vector control modes
- Tension control capability
- Modbus Built-in and RS485 communication
- Removable keypad with standard RJ45 interface
- Maximum output frequency up to 600HZ
- افزایش گشتاور تا ۱۵۰٪ در فرکانس ۰/۵ هرتز
- مجهز به ورودی و خروجی پالس تا فرکانس ۵۰ کیلوهرتز
- مدهای کنترلی V/F و Sensor Less Vector
- کنترل گشتاور
- دارای شبکه صنعتی (Modbus (RTU) و قابلیت برقراری ارتباط RS485
- قابلیت جدا شدن صفحه کلید با کابل شبکه RJ45
- حداکثر فرکانس خروجی تا ۶۰۰ هرتز

MA510 Series



► Product Specification

Model Number	Input Voltage	Rated Power	Rated Input Current	Rated Output Current	Compatible Motor
MA510-4025	3-Phase 380V±15%	18.5	38	37	25
MA510-4030		22	46	45	30
MA510-4040		30	62	60	40
MA510-4050		37	76	75	50
MA510-4060		45	90	90	60
MA510-4075		55	105	110	75
MA510-40100		75	140	150	100
MA510-40125		90	160	176	125
MA510-40150		110	210	210	150
MA510-40175		132	240	250	175

01-7

MA610 Series

(2HP ~ 20HP) 220V/380V

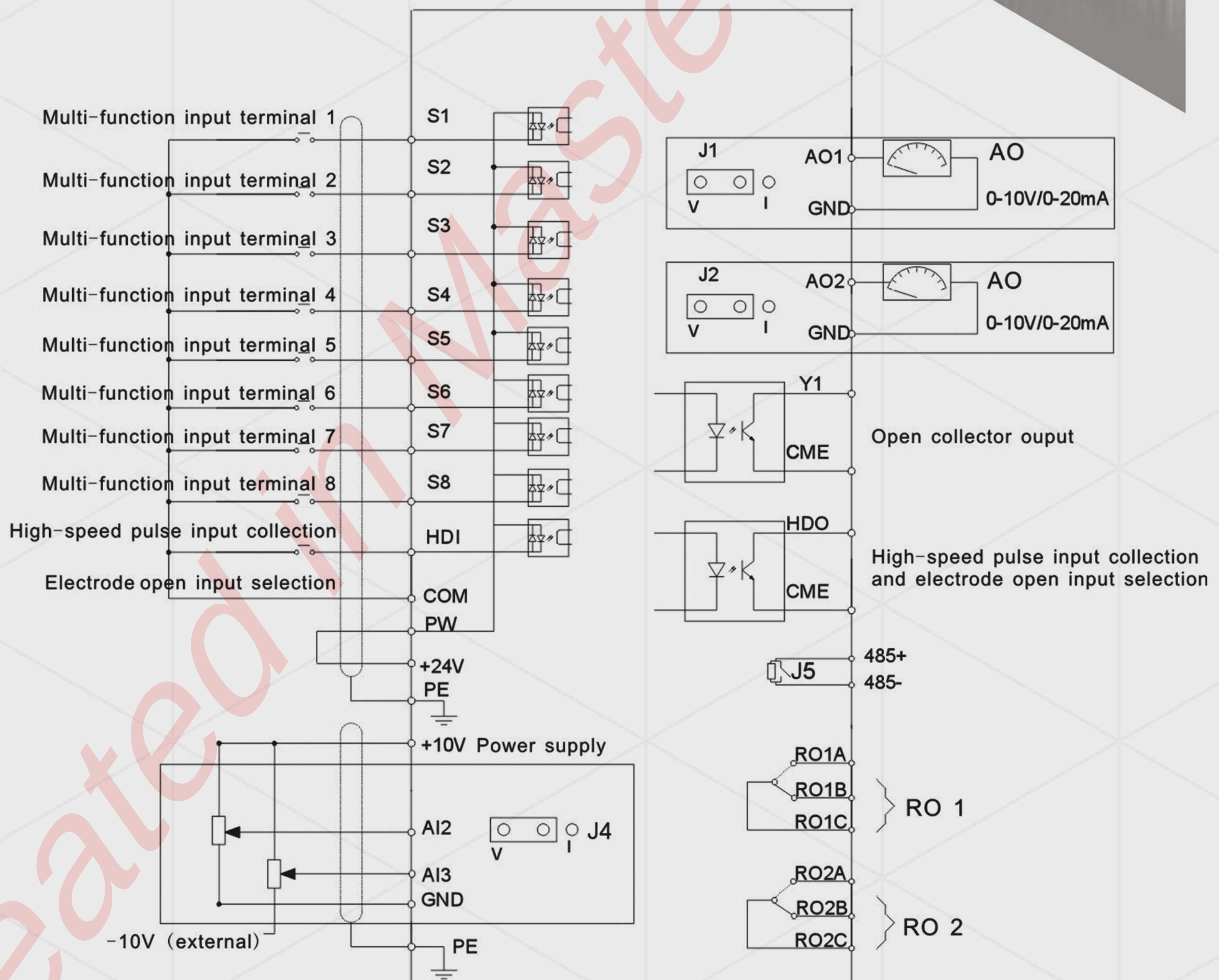


► Applications

- فن • Fan
- پمپ • PUMP
- جرثقیل • Crane
- میکسر • Mixer
- نوار نقاله • Conveyor
- سی ان سی • CNC
- موتور اسپیندل • The spindle motor
- صنعت سنگبری • Stone Industry
- صنعت نساجی • Textile Industry
- ماشین های تزریق پلاستیک • Plastic injection machines



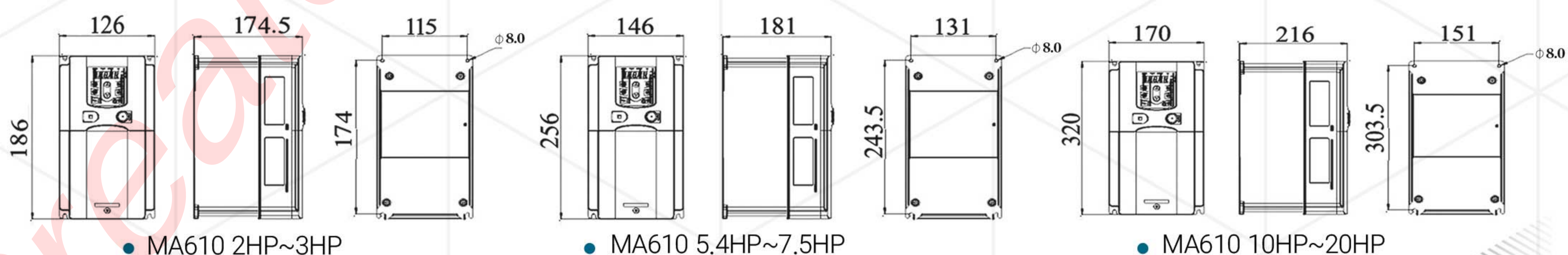
▶ Wiring Diagram



General Specification

Item		MA610 Type	
Input	Input voltage(V)	AC 3PH 220V(-15%)~240V(+10%) AC 3PH 380V(-15%)~440V(+10%) AC 3PH 520V(-15%)~690V(+10%)	
	Input frequency(HZ)	50HZ or 60HZ Allowed range:47~63HZ	
Output	Output voltage(V)	0~Input voltage	
	Output current(A)	Refer to the rated value	
	Output power(KW)	Refer to the rated value	
	Output frequency(HZ)	0~400HZ	
Technical control feature	Control mode	SVPW M,SVC	
	Motor type	Asynchronous motor	
	Speed ratio	Asynchronous motor 1:100(SVC)	
	Speed control accuracy	±0.2%(sensorless vector control)	
	Speed fluctuation	±0.3%(sensorless vector control)	
	Torque response	<20ms(sensorless vector control)	
	Torque control accuracy	10%(sensorless vector control)	
	Starting torque	Asynchronous motor:0.5HZ/150%(SVC)	
	Overload capability	G type:	
		150% of rated current:	1 minute
180% of rated current:		10 seconds	
200% of rated current:		1 second	
Running control feature	Frequency setting	Digital setting,analog setting,pulse frequency setting,multi-step speed running setting,simple PLC setting,PID setting,MODBUS communication setting. Shift between the set combination and set channel.	
	Auto voltage adjustment	Keep a stable voltage automatically when the grid voltage transients	
	Fault protection	Provide over 30 fault protection functions: overcurrent,overvoltage,undervoltage,overheating,phase loss and overload,etc.	
	Speed tracking	Restart the rotating motor smoothly Note:This function is available for the inverters of 4KW and above 4KW.	
Peripheral	Terminal analog input	≤20mV	
	Terminal switch input resolution	≤2ms	
Interface	Analog input	1 channels(AI2) 0~10V/0~20mA and 1 channel(AI3) -10~10V	
	Analog output	2 channels(AO1,AO2) 0~10V/0~20mA	
	Digital input	8 channels common input,the Max.frequency: 1KHZ, internal impedance:3.3KΩ; 1 channel high speed input,the Max.frequency:50KHZ	
	Digital output	1 channel high speed pulse output,the Max.frequency:50KHZ; 1 channel Y terminal open collector pole output	
	Relay output	2 channels programmable relay output RO1A NO,RO1B NC,RO1C common terminal RO2A NO,RO2B NC,RO2C common terminal Contactor capability:3A/AC250V,1A/DC30V	
	Others	Mountable method	Wall,flange and floor mountable
Temperature of the running environment		-10~50°C,derate above 40°C	
Ingress protectin		IP20	
Cooling		Air-cooling	
Braking unit		Built-in braking unit for inverters below 30KW(including 30KW) External braking unit for others	
EMC filter		Built-in C3 filter:meet the degree requirement of IEC61800-3 C3 External optional filter:meet the degree requirement of IEC61800-3 C2	

Dimensions (mm)



► Technical Specifications

- Increase torque boost up to 150% at 0.5HZ
- افزایش گشتاور تا ۱۵۰٪ در فرکانس ۰٫۵ هرتز
- Tension control capability
- مد تخصصی تنش (کنترل گشتاور)
- Pulse input & output up to 50KHZ
- دارای ورودی و خروجی پالس تا فرکانس ۵۰ کیلوهرتز
- V/F and Sensor Less Vector control modes
- مدهای کنترلی V/F و Sensor Less Vector
- Modbus Built-in and RS485 communication
- دارای شبکه صنعتی Modbus (ASCII & RTU) و قابلیت برقراری ارتباط RS485
- It is possible to use two separate keypads at the same time
- قابلیت استفاده از دو صفحه کلید به طور همزمان
- It has an external and removable keypad
- دارای صفحه کلید خارجی و قابل جدا شدن
- Equipped with an external volume on the keypad
- دارا بودن ولوم روی صفحه کلید
- Specialized parameters for pump applications
- پارامترهای تخصصی پمپ
- Maximum output frequency up to 600HZ
- حداکثر فرکانس خروجی تا ۶۰۰ هرتز



MA610 Series



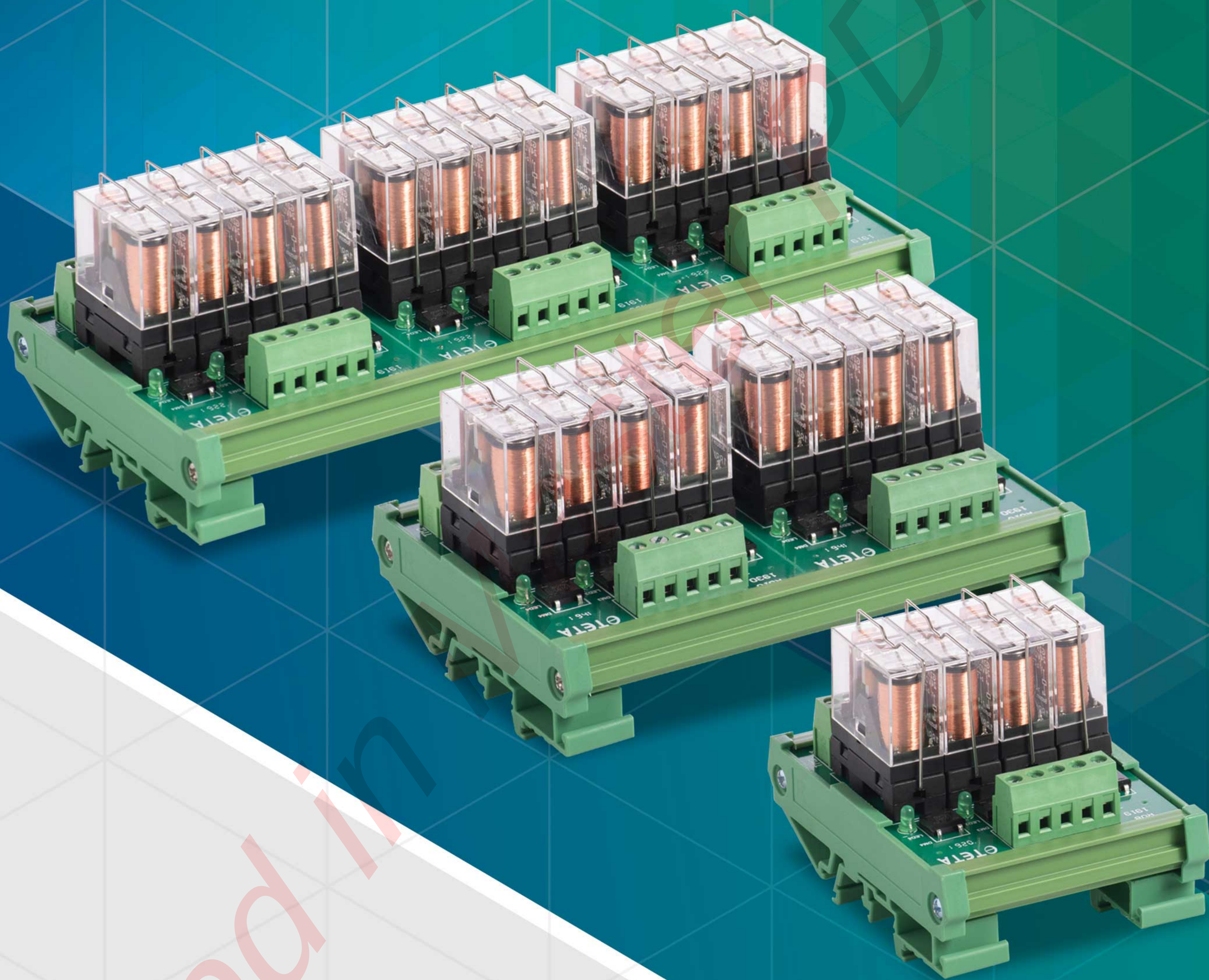
► Product Specification

Model	Constant torque			Variable torque		
	Output power (KW)	Input current (A)	Output current (A)	Output power (KW)	Input current (A)	Output current (A)
MA610-2005	4	21	17.5	5.5	25.2	22.7
MA610-4002	1.5	5	3.7	2.2	5.8	5
MA610-4003	2.2	5.8	5	3.7	7	6
MA610-4005	4	13.5	9.5	5.5	19.5	14
MA610-4008	5.5	19.5	14	7.5	25	18.5
MA610-4010	7.5	25	18.5	11	32	25
MA610-4015	11	32	25	15	40	32
MA610-4020	15	40	32	18.5	47	38

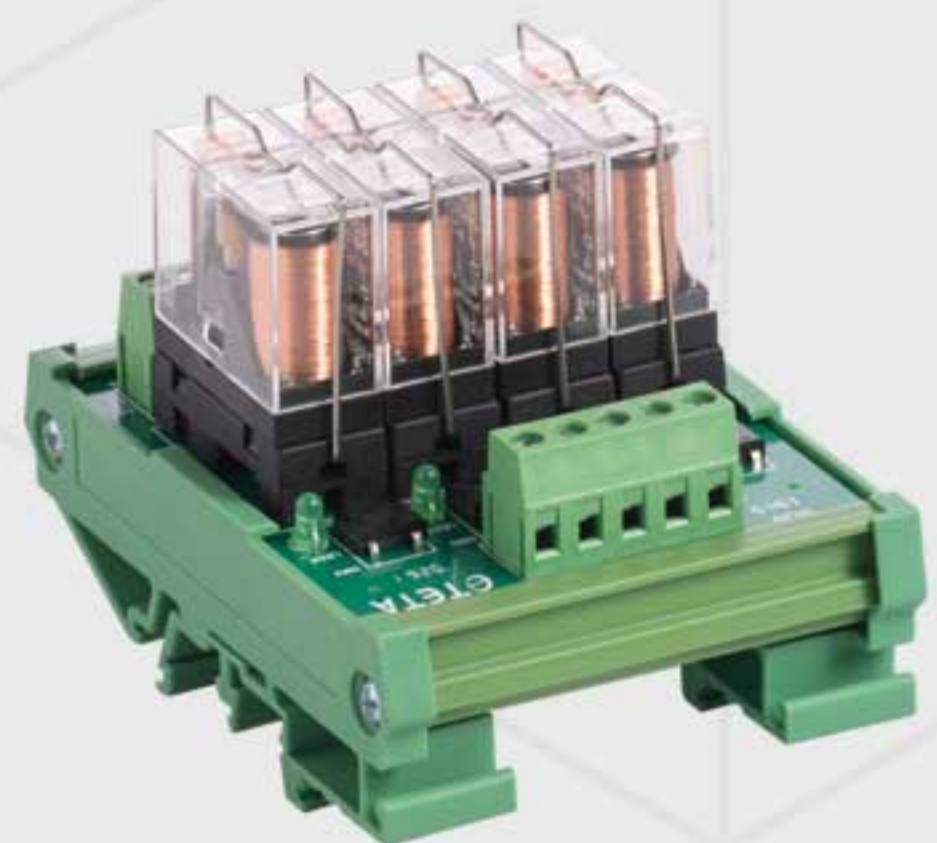
02

Relay Card

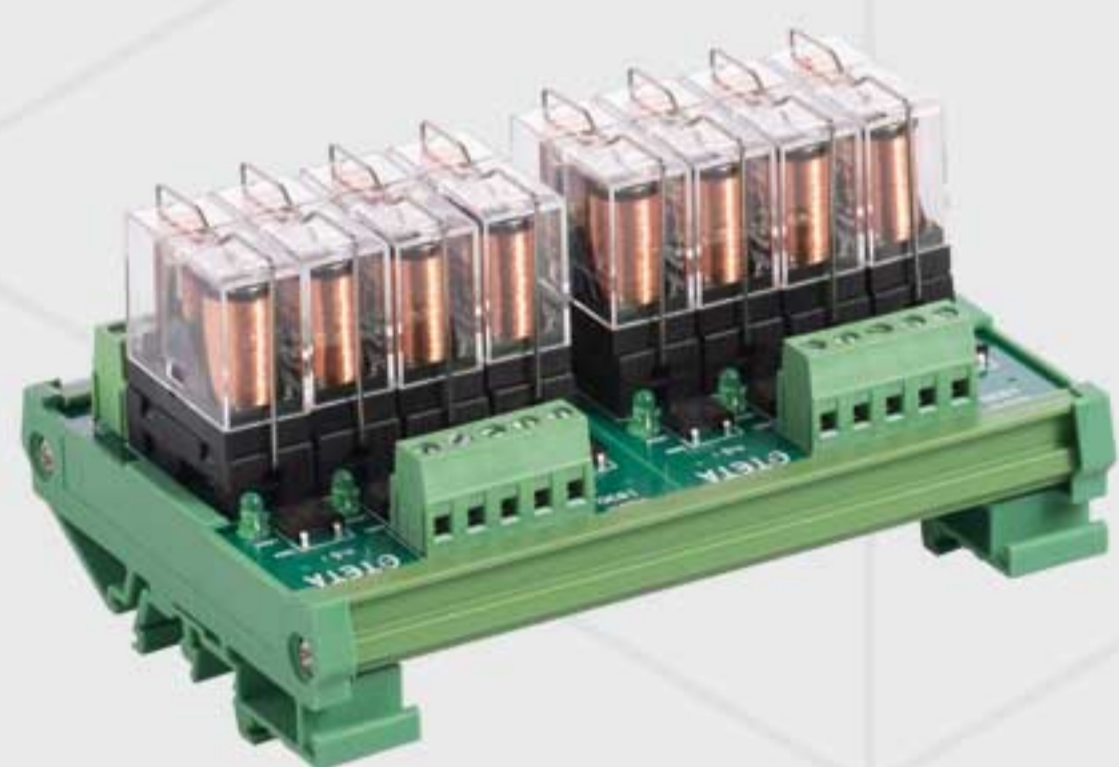
(4CH - 8CH - 12CH)



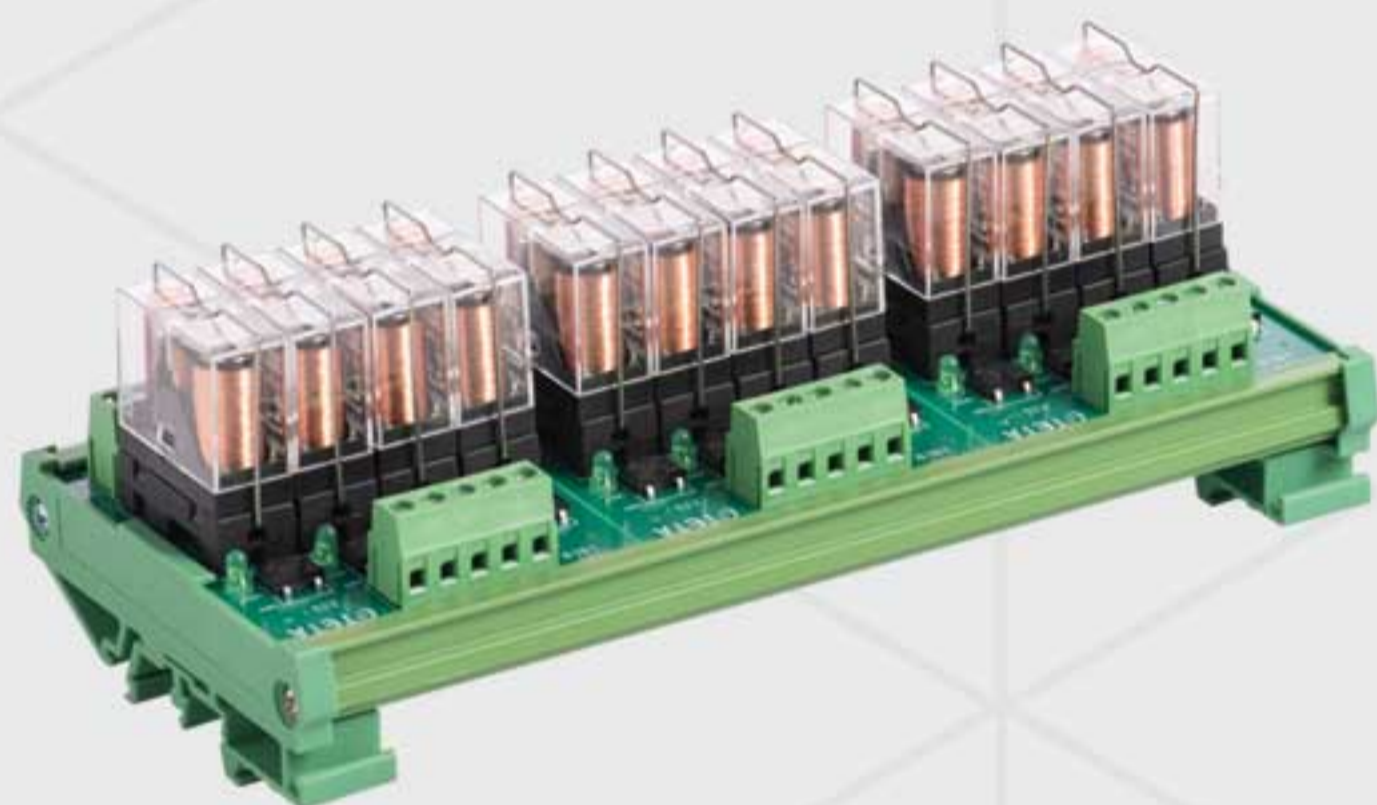
General Specification



- Contact Type: 4N.O & 2N.C



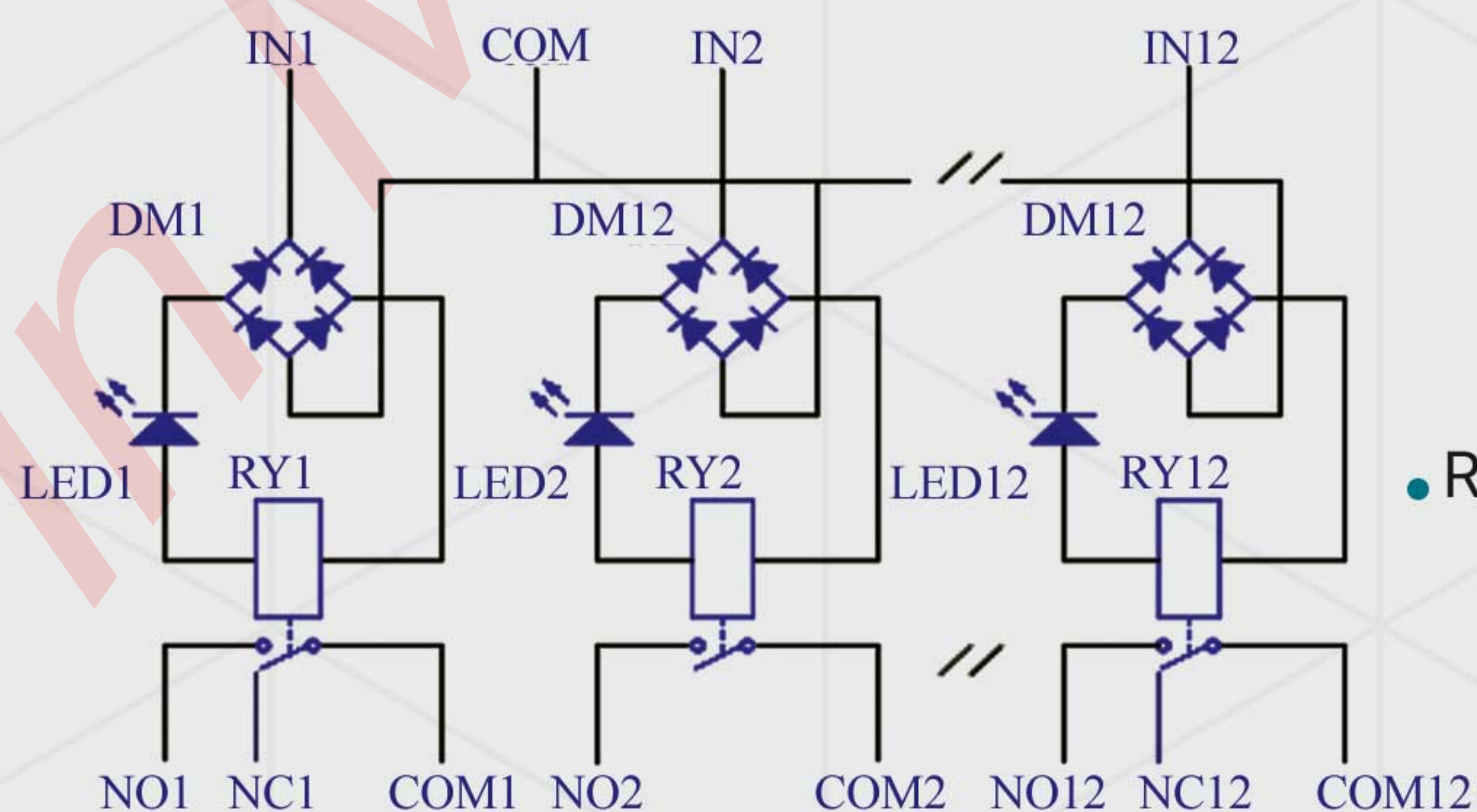
- Contact Type: 8N.O & 4N.C



- Contact Type: 12N.O & 6N.C

24VDC Relay	
AC/DC control voltage	
DC without polarity	
Status LED display	
INPUT TECHNICAL DATA	
Rate Voltage DC (without polarity)	24VDC
Rate Current(1 channel)	34.6mA
TURN ON time	15ms
TURN OFF time	10ms AC/5ms DC
Protecton Circuit	Damping and polarity
Max.Switching Voltage	380VAC,125VDC
Max.Switching Current	16A
OUTPUT TECHNICAL	
Rated Load(resistive)	16A at 250VAC,16A at 30VDC
Relay Life time	20.000.000 operations min
Rated Load(inductive load)	16A at 250VAC,16A at 30VDC
GENERAL TECHNICAL DATA	
Operating temperature range	-40~+70°C
Coil/contact isolation	5KVAC/60HZ s
Isolation between output terminals	10KVAC/60 s (between open contact)
Statuses display	green LED
Connection terminal	2.5mm ² fixed screw type
Approx.Weight	150gr 280gr 410gr
Humidity	85% RH or less

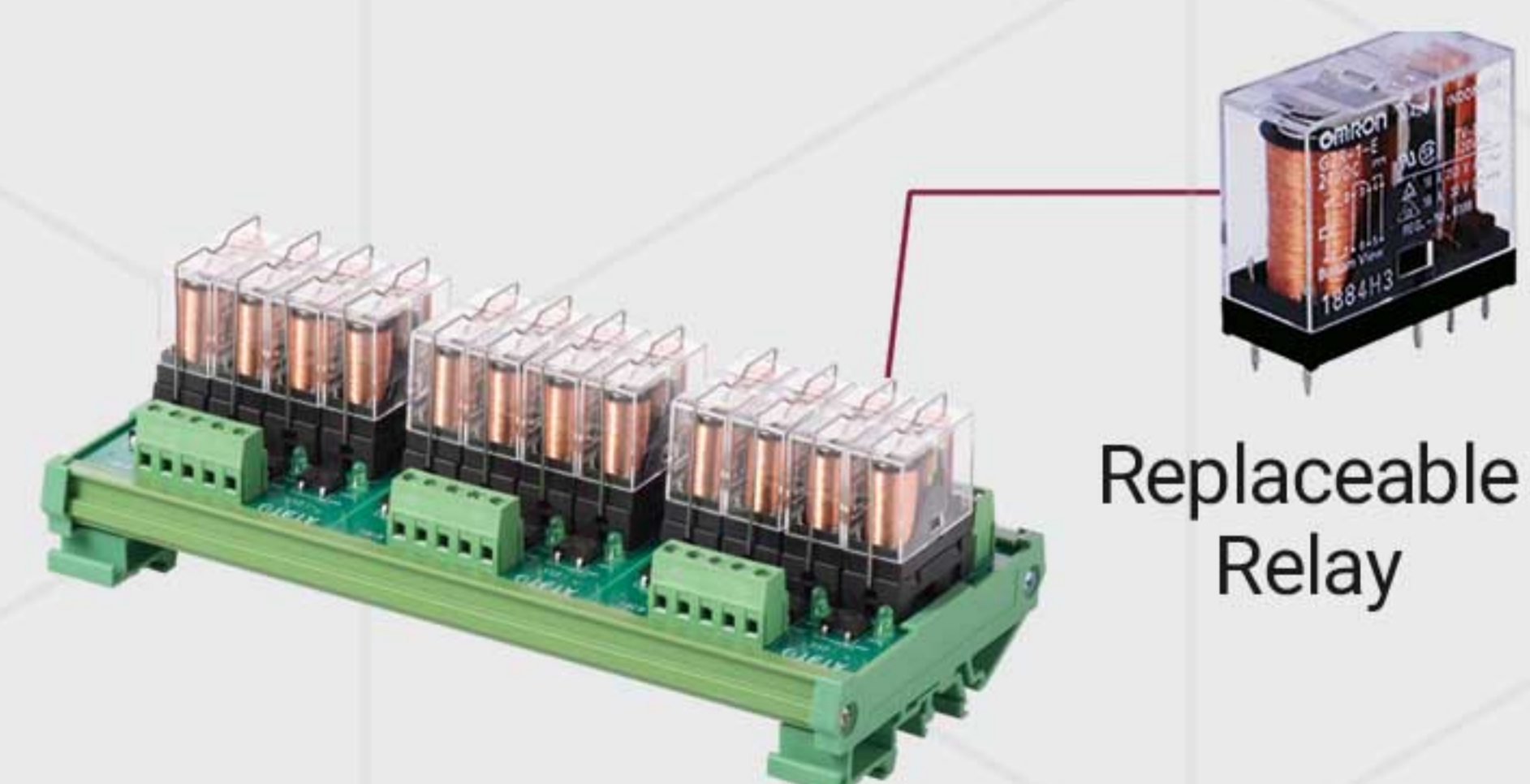
Circuit Diagram



- Relay-4CH/8CH/12CH

Dimensions (mm)

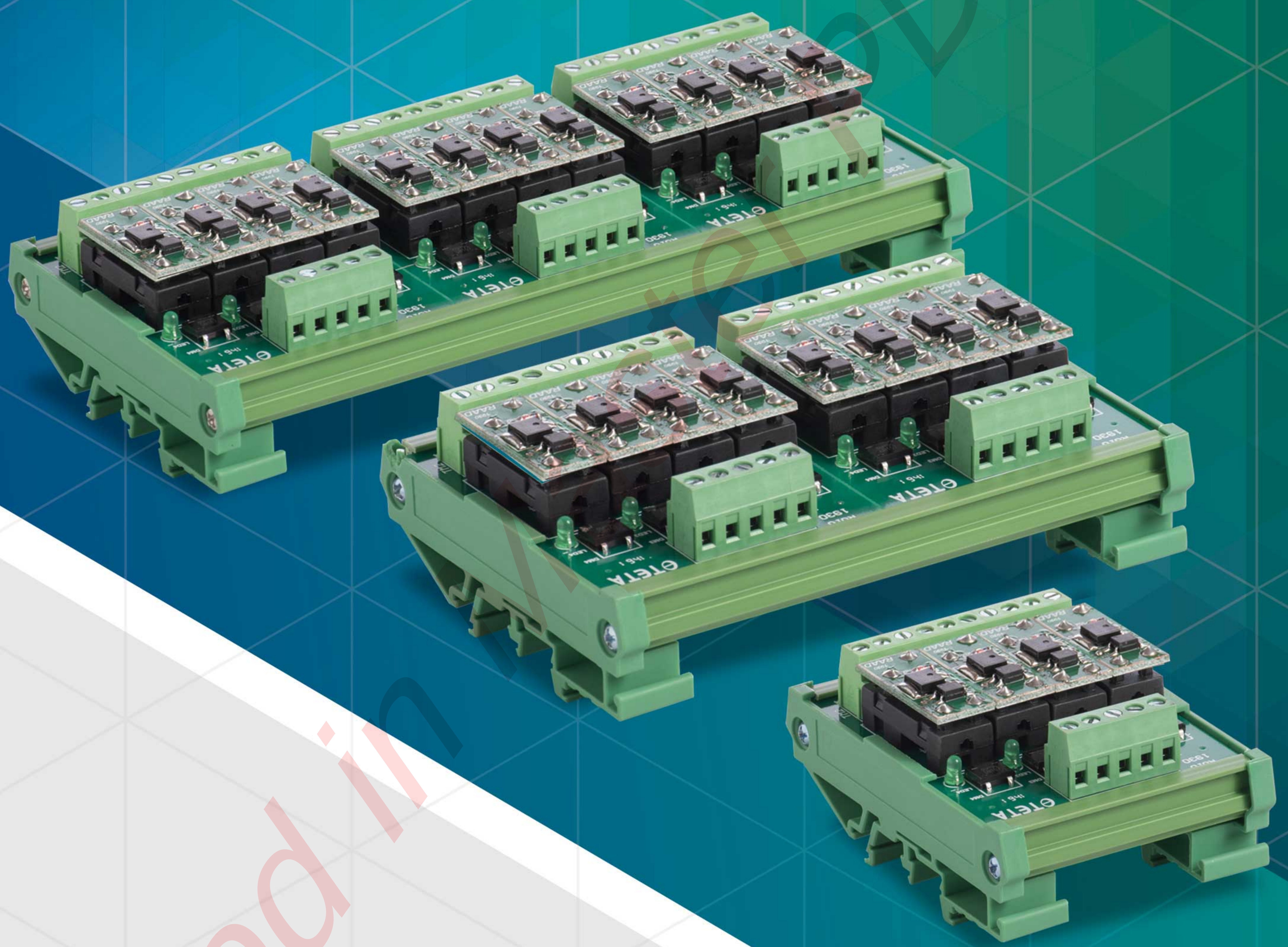
Size Type	W(mm)	H(mm)	D(mm)
4CH	60	85	50
8CH	115	85	50
12CH	170	85	50



03

Transistor Card

(4CH - 8CH - 12CH)



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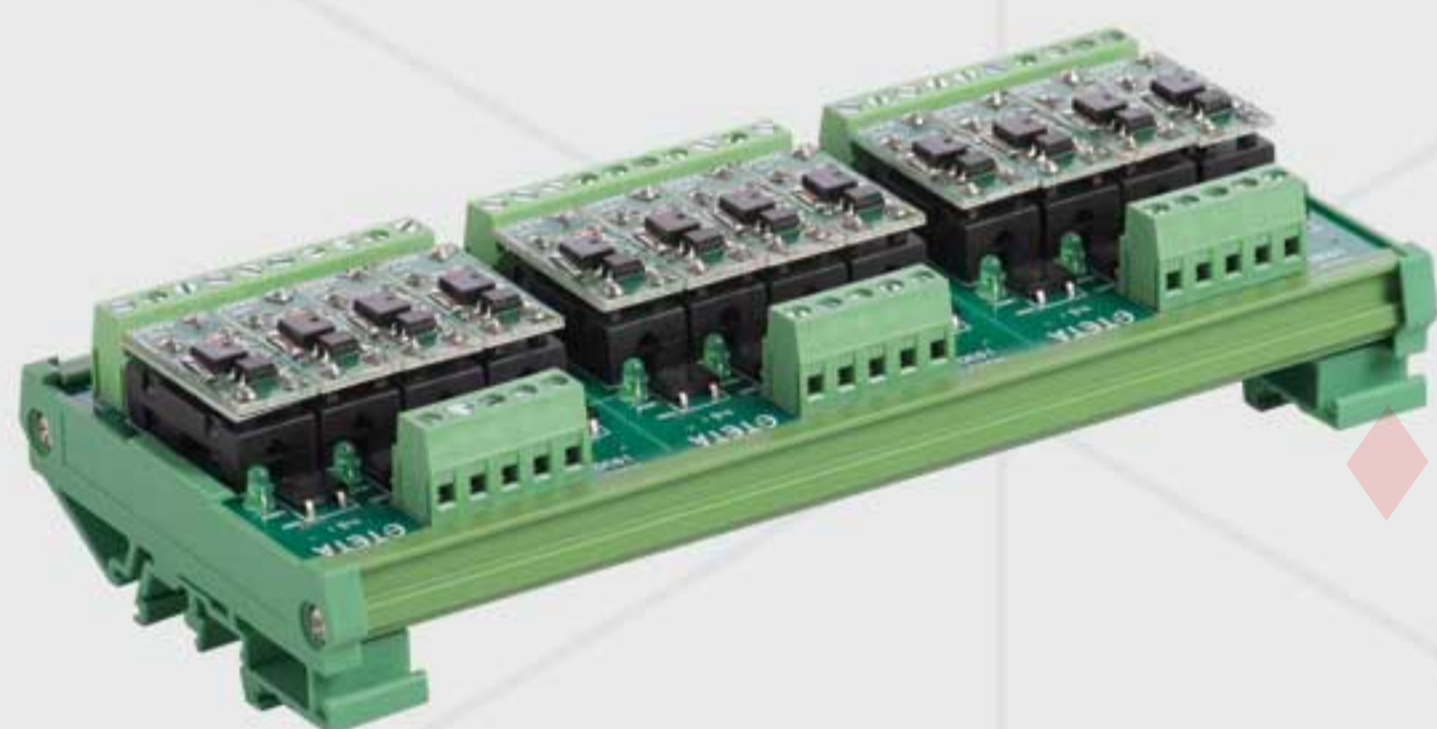
► General Specification



- Contact Type: 4N.O & 2N.C



- Contact Type: 8N.O & 4N.C



- Contact Type: 12N.O & 6N.C

24VDC Transistor	
AC/DC control voltage	
DC without polarity	
Status LED display	
INPUT TECHNICAL DATA	
Rate Voltage DC (without polarity)	24VDC
Rate Current(1 chanel)	34.6mA
TURN ON time	15ms
TURN OFF time	10ms AC/5ms DC
Protecthon Circuit	Damping and polarity
Max.Switching Voltage	380VAC,125VDC
Max.Switching Current	16A
OUTPUT TECHNICAL	
Rated Load(resistive)	16A at 250VAC,16A at 30VDC
Relay Life time	20.000.000 operations min
Rated Load(inductive load)	16A at 250VAC,16A at 30VDC
GENERAL TECHNICAL DATA	
Operating temperature range	-40~+70°C
Coil/contact isolation	5KVAC/60HZ s
Isolation between output terminals	10KVAC/60 s (between open contact)
Statuses display	green LED
Connection terminal	2.5mm ² fixed screw type
Approx.Weight	150gr 280gr 410gr
Humidity	85% RH or less

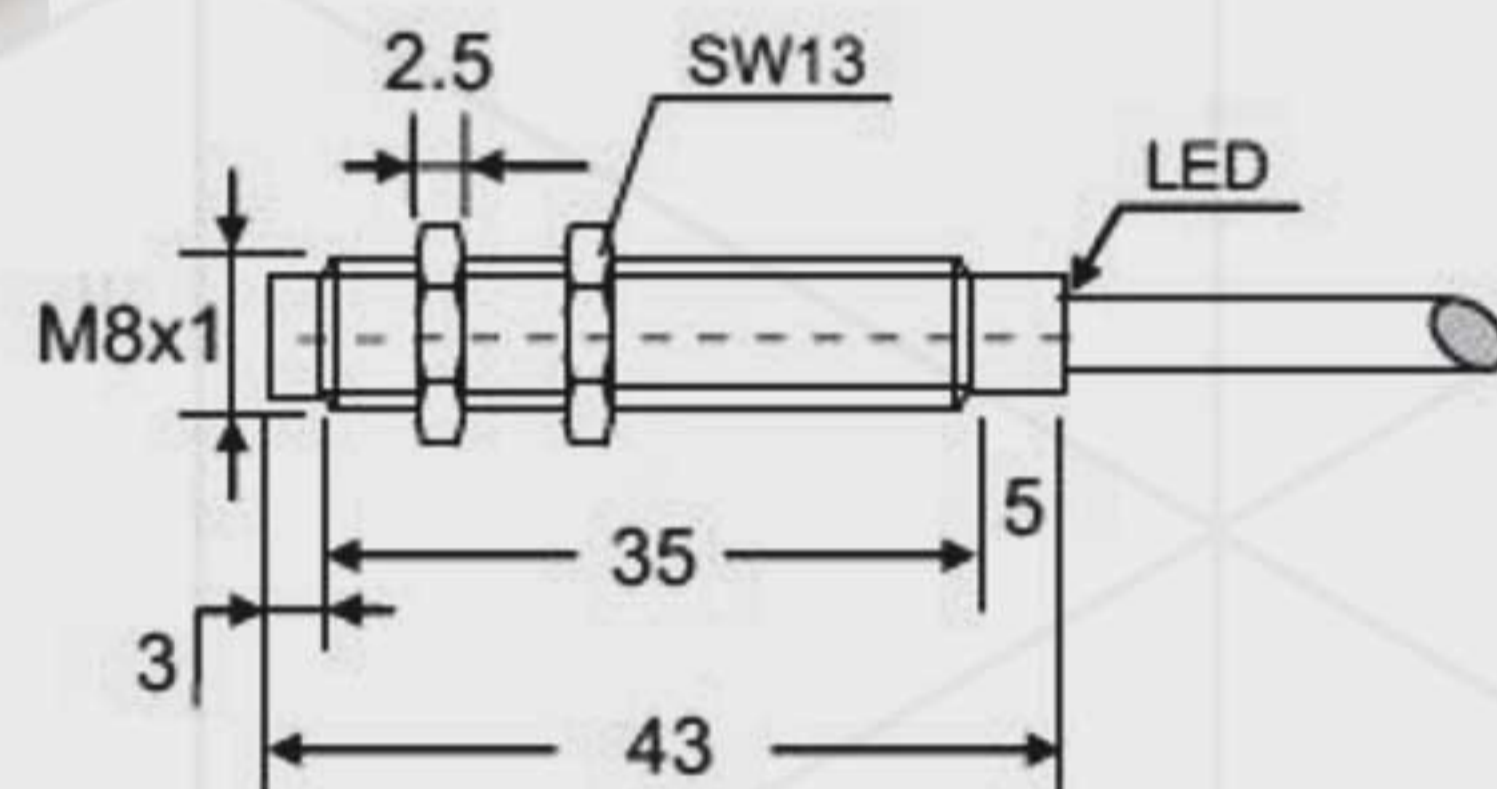
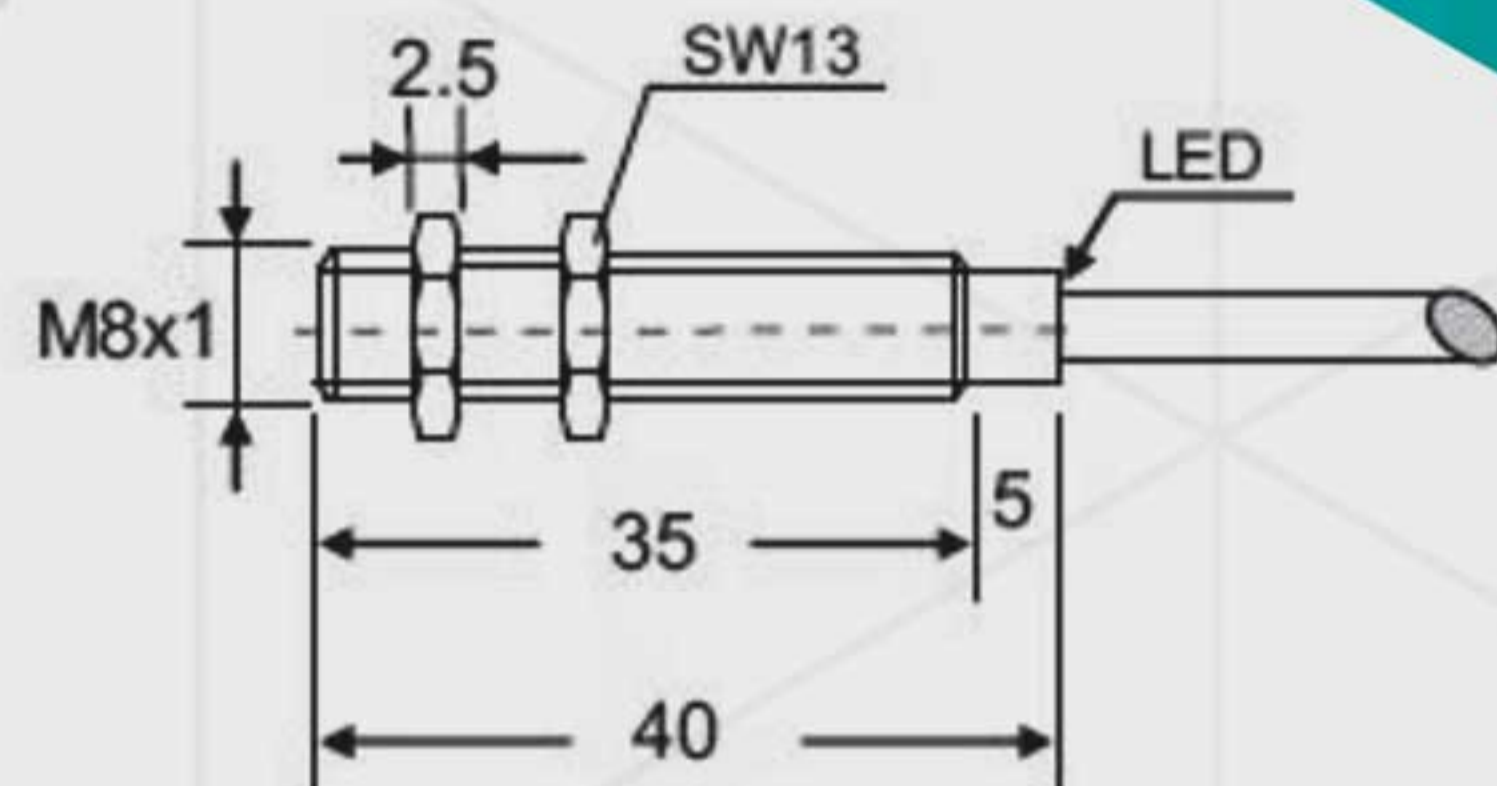
► Dimensions (mm)

Size Type	W(mm)	H(mm)	D(mm)
4CH	60	85	50
8CH	115	85	50
12CH	170	85	50

04

Proximity sensor

(M8 - M12 - M18 - M30)



01 - M8 Lead Type

Technical parameter

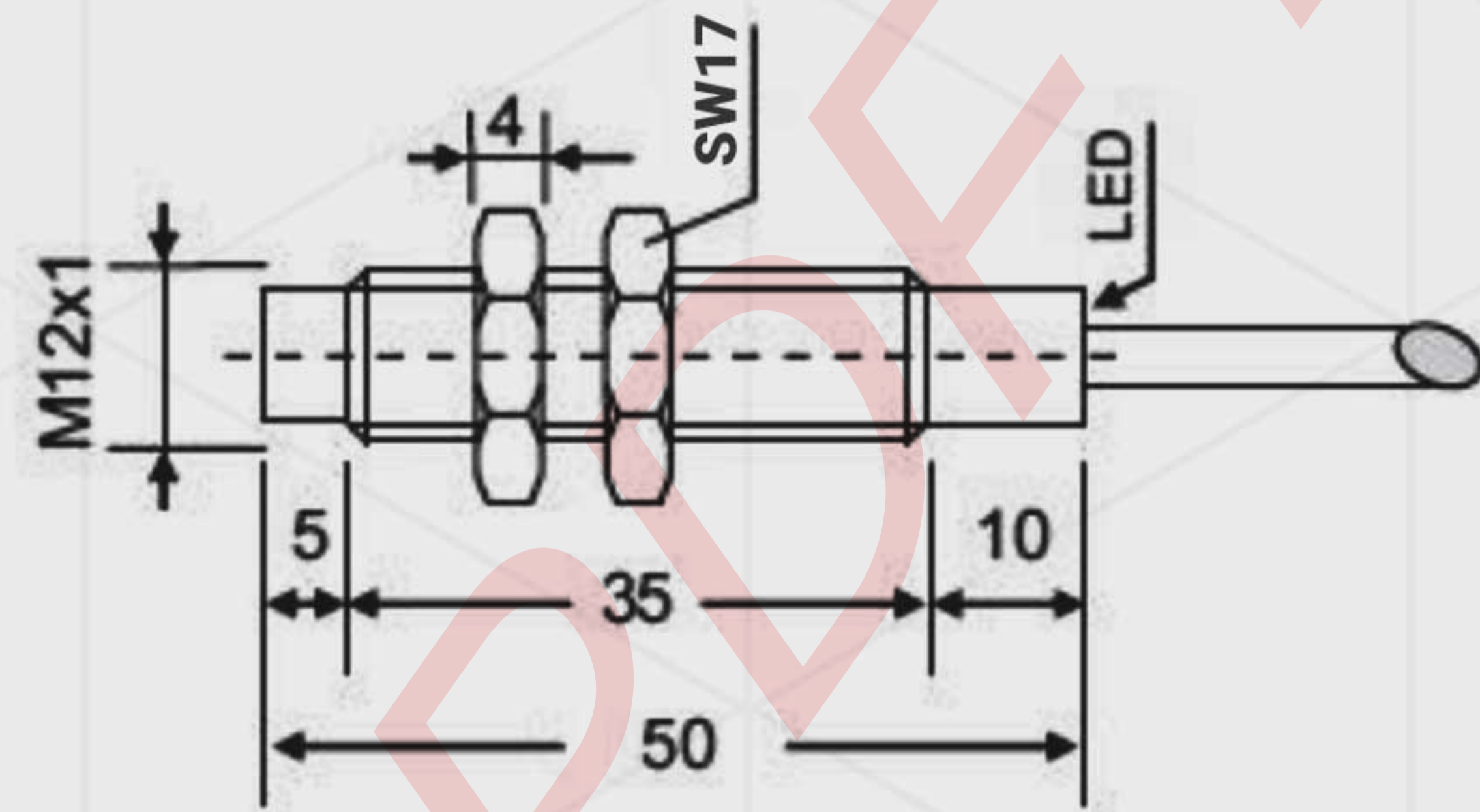
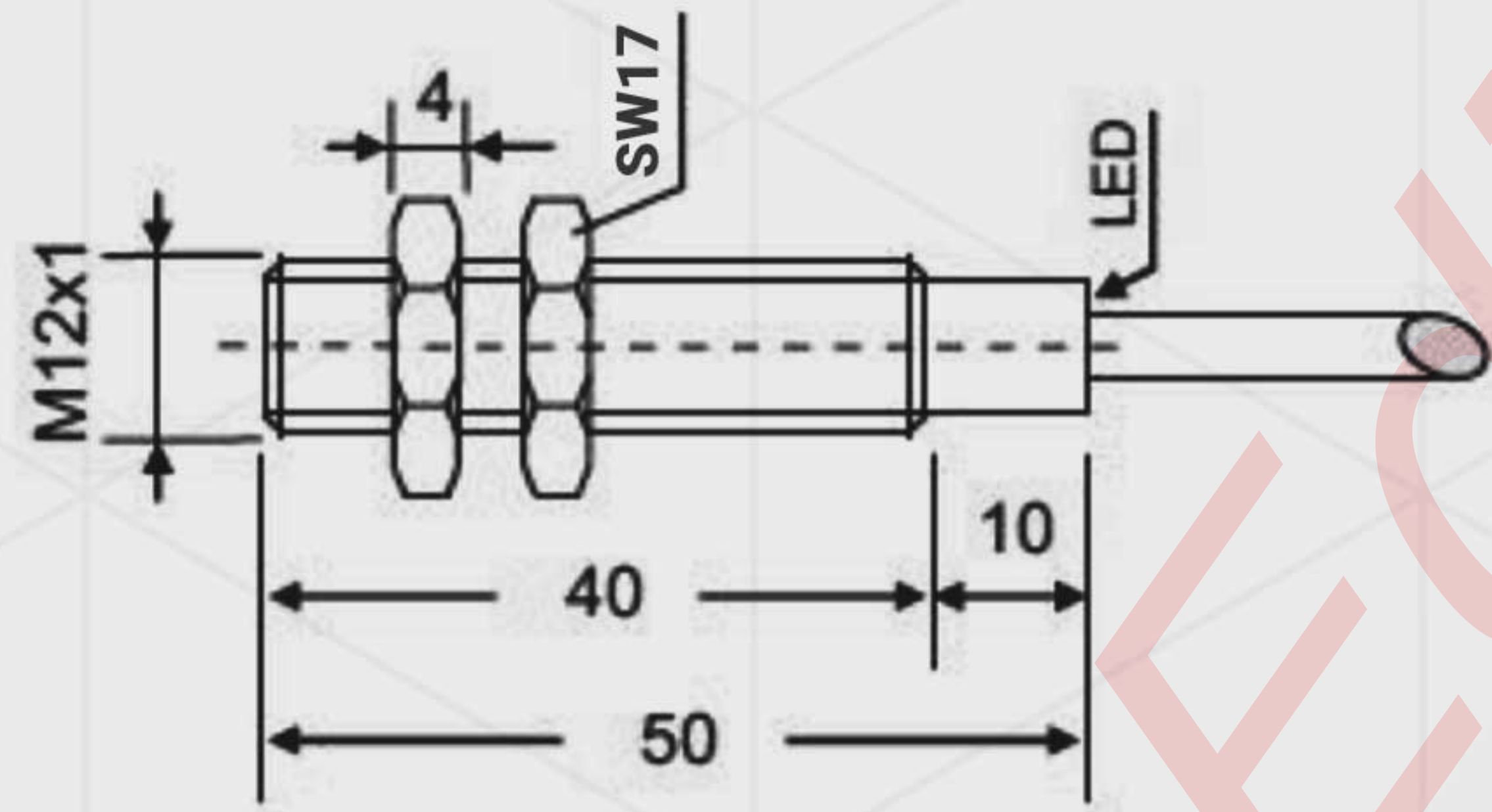
Boundary dimension	M8*40	M8*40
Install form	Flush mounted	Non-Flush mounted
Detection distance	1.5mm	2mm
Working voltage	DC:10-30V	DC:10-30V
Working current	200mA	200mA
Frequency(HZ)	2000	2000
Protection level	IP67	IP67
Ambient temperature	-25°C~+70°C	-25°C~+70°C
Short circuit protection	YES	YES
Polarity protection	YES	YES
Shell material	CuZn-Cr	CuZn-Cr

Model selection

AC 2-wire NO
AC 2-wire NC
DC 3-wire NPN NO	TR08-1.5DN	TR08-2DN
DC 3-wire NPN NC	TR08-1.5DN2	TR08-2DN2
DC 3-wire PNP NO	TR08-1.5DP	TR08-2DP
DC 3-wire PNP NC	TR08-1.5DP2	TR08-2DP2



02 - M12 Lead Type

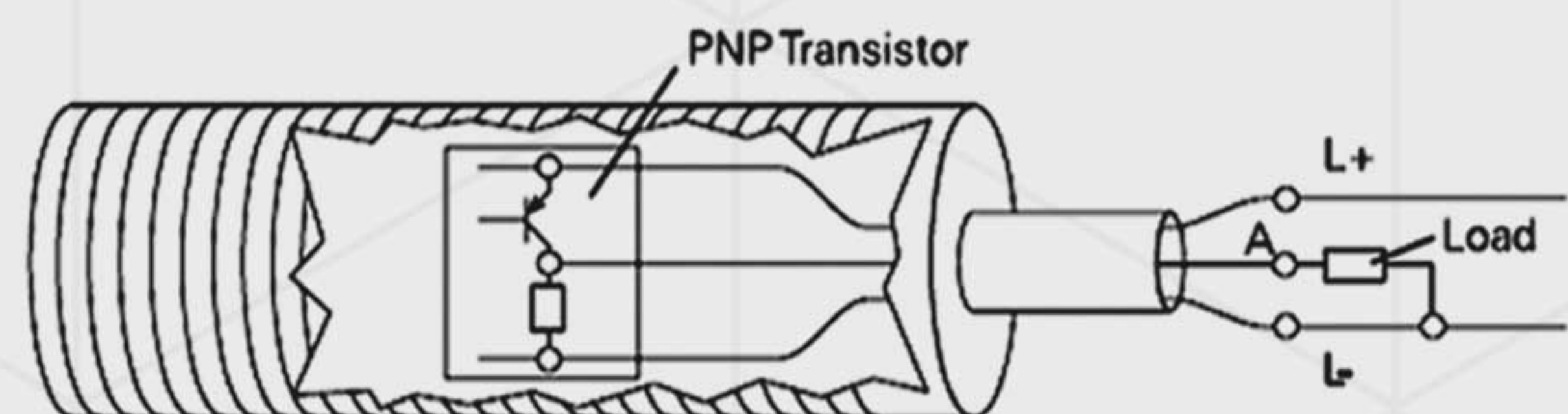
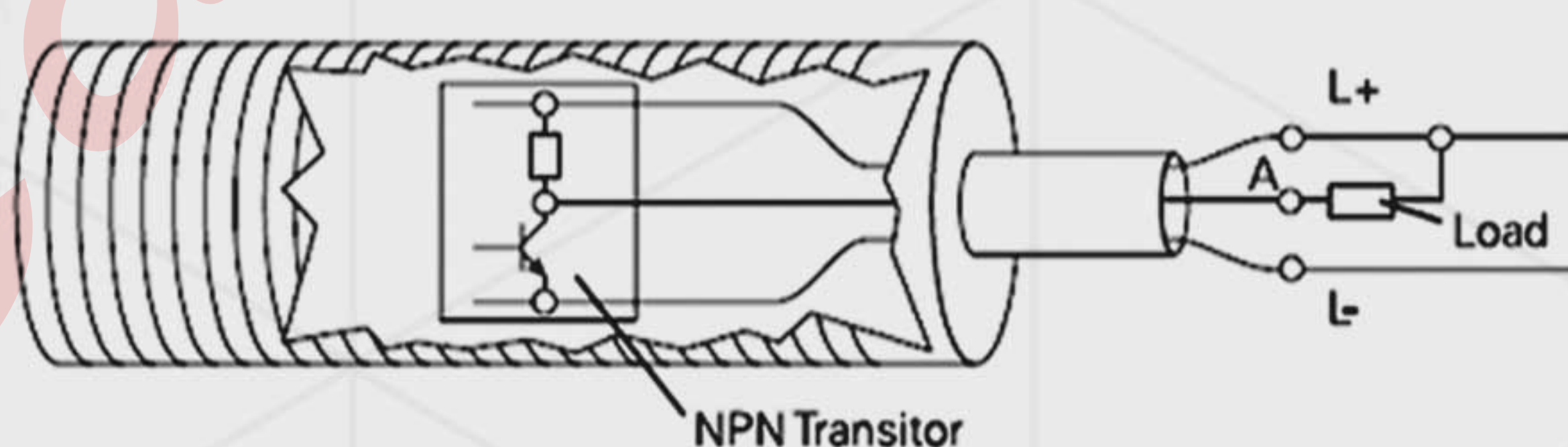


Technical parameter

Boundary dimension	M12*50	M12*45
Install form	Flush mounted	Non-Flush
Detection distance	2mm	4mm
Working voltage	DC:10-30V,AC:20-250V	DC:10-30V,AC:20-250V
Working current	DC:200mA,AC:400mA	DC:200mA,AC:400mA
Frequency(HZ)	DC:1500,AC:50	DC:1000,AC:30
Protection level	IP67	IP67
Ambient temperature	-25°C~+70°C	-25°C~+70°C
Short circuit protection	YES	YES
Polarity protection	YES	YES
Shell material	CuZn-Cr	CuZn-Cr

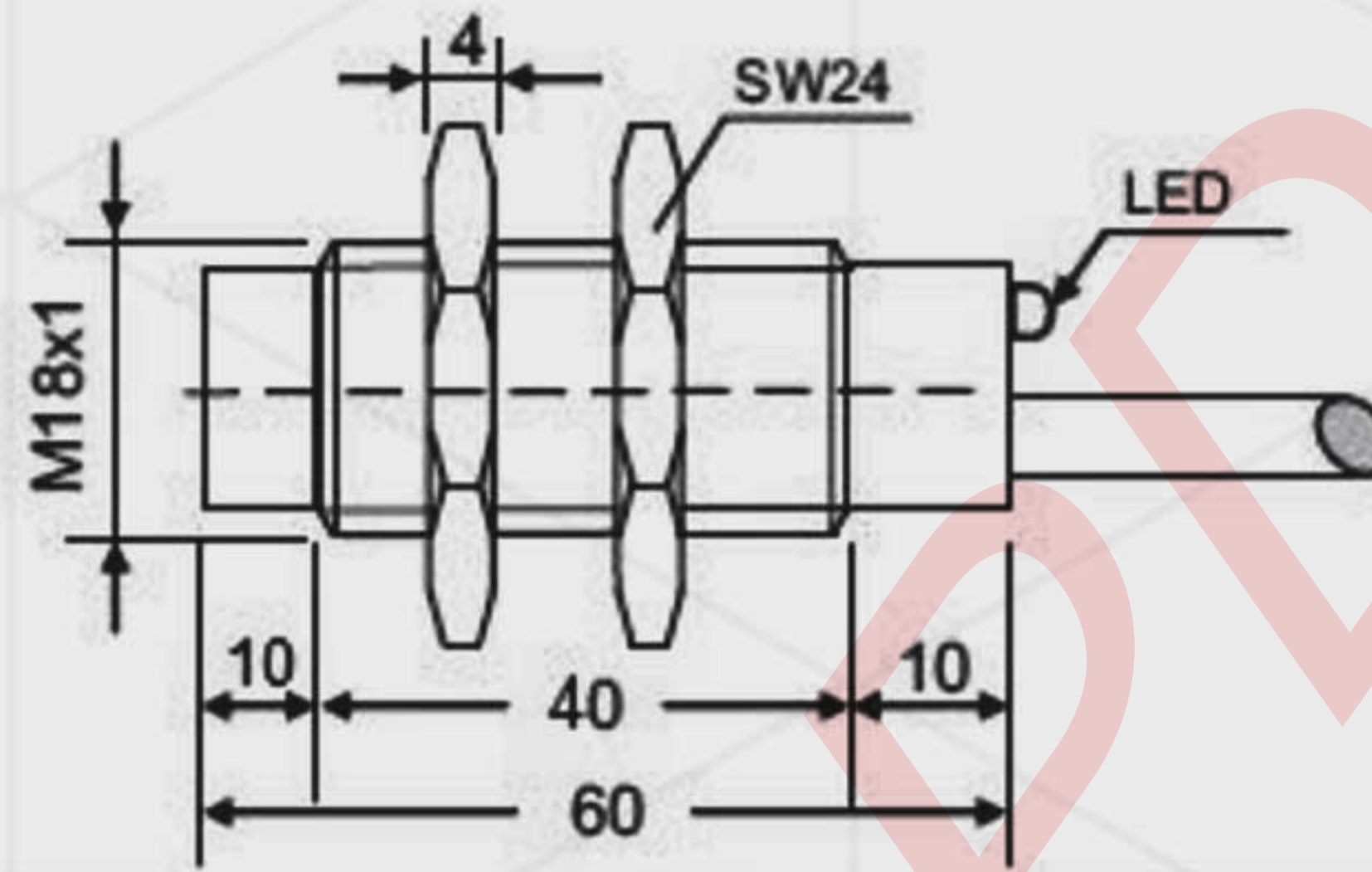
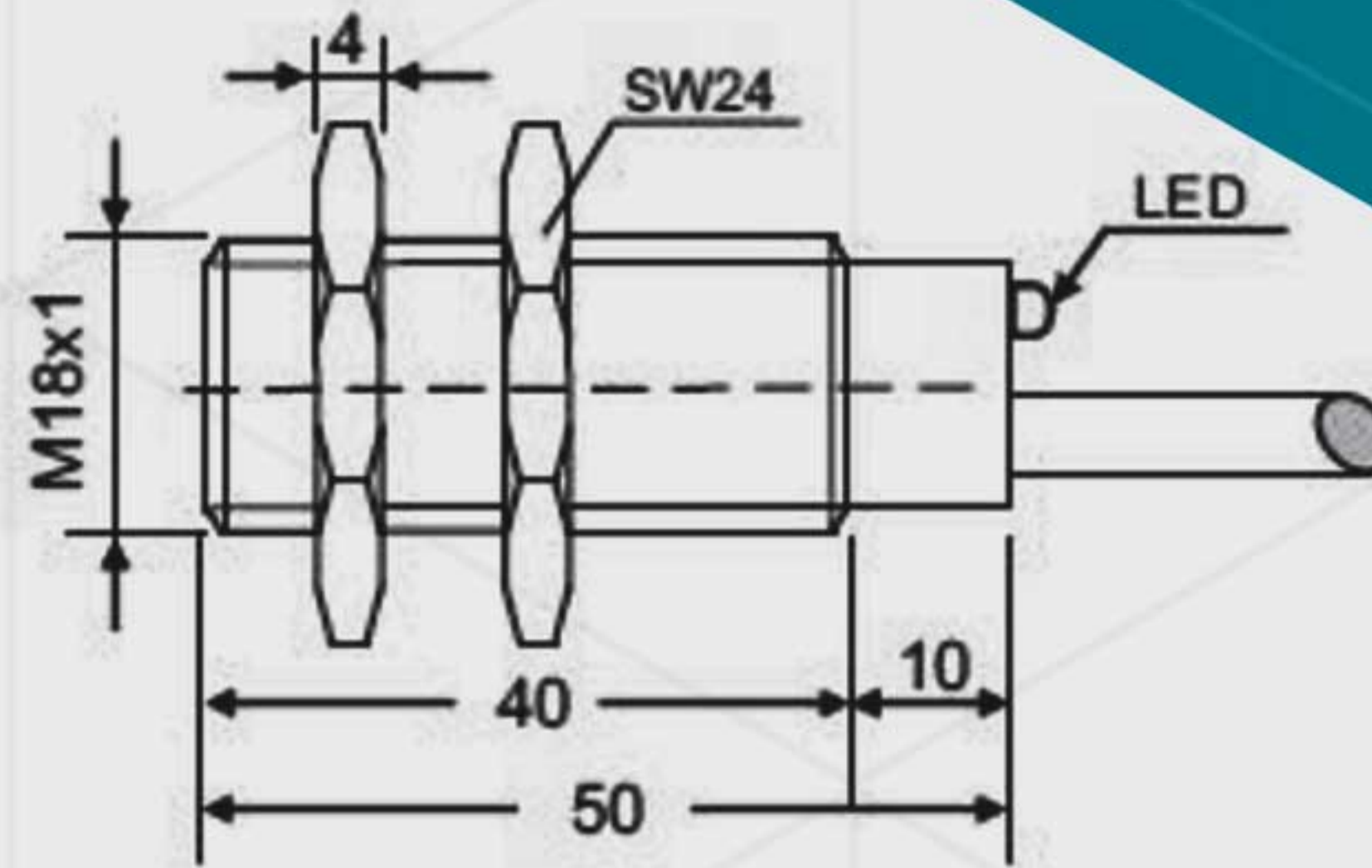
Model selection

AC 2-wire NO	TR12-2AO	TR12-4AO
AC 2-wire NC	TR12-2AC	TR12-4AC
DC 3-wire NPN NO	TR12-2DN	TR12-4DN
DC 3-wire NPN NC	TR12-2DN2	TR12-4DN2
DC 3-wire PNP NO	TR12-2DP	TR12-4DP
DC 3-wire PNP NC	TR12-2DP2	TR12-4DP2



NPN / PNP Diagram

03 - M18 Lead Type

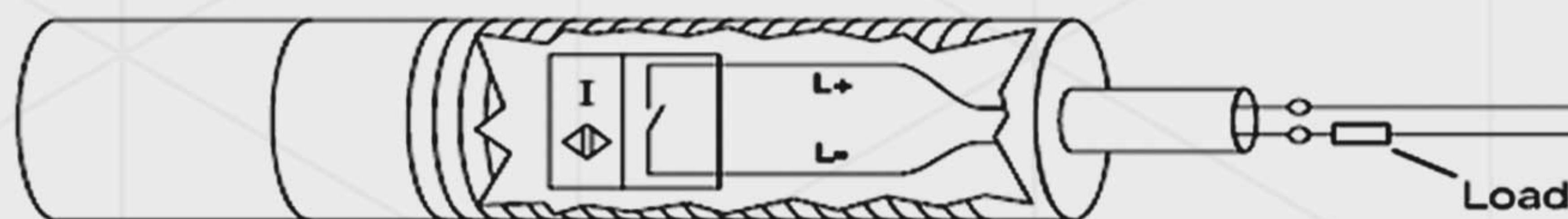


Technical parameter

Boundary dimension	M18*50	M18*50
Install form	Flush mounted	Non-Flush mounted
Detection distance	5mm	8mm
Working voltage	DC:10-30V,AC:20-250V	DC:10-30V,AC:20-250V
Working current	DC:200mA,AC:400mA	DC:200mA,AC:400mA
Frequency(HZ)	DC:1000,AC:40	DC:800,AC:35
Protection level	IP67	IP67
Ambient temperature	-25°C~+70°C	-25°C~+70°C
Short circuit protection	YES	YES
Polarity protection	YES	YES
Shell material	CuZn-Cr	CuZn-Cr

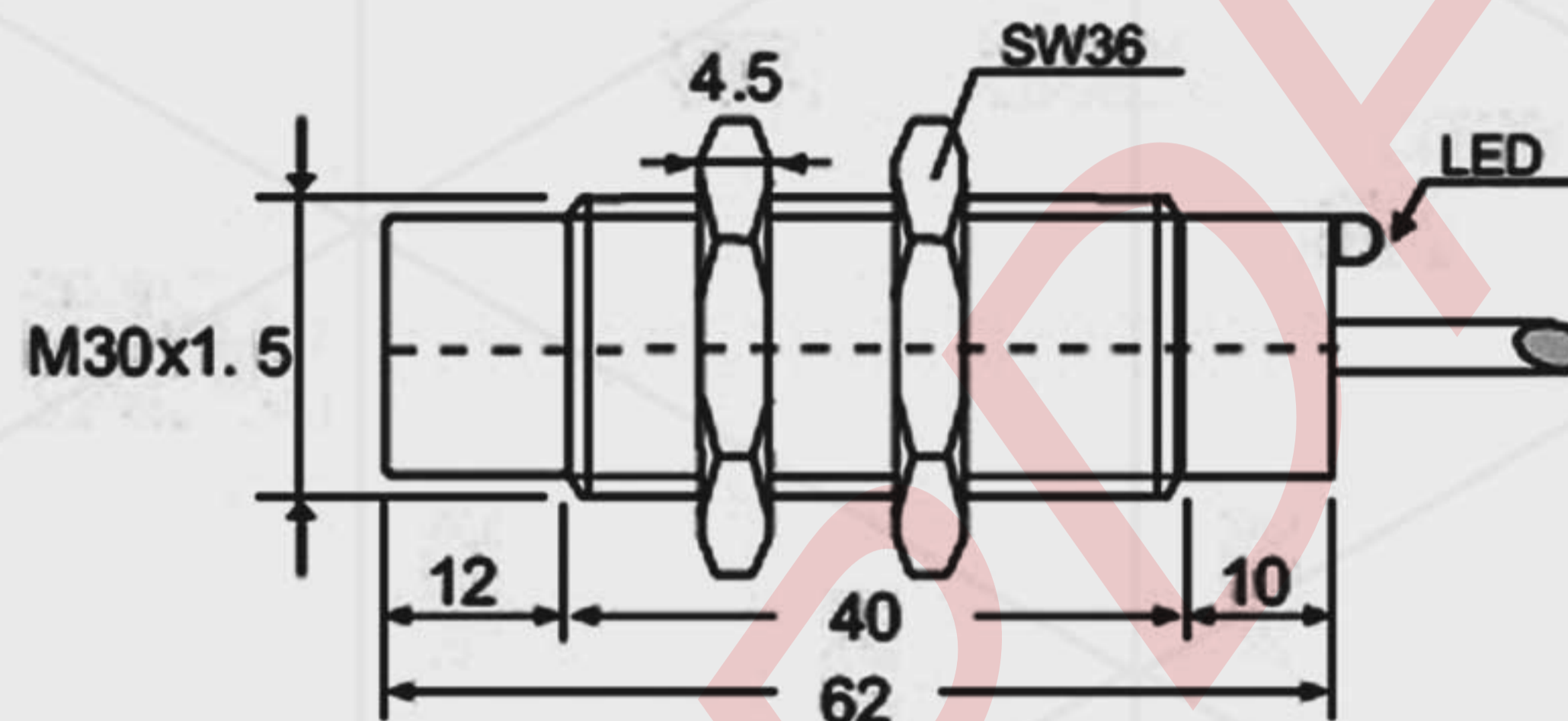
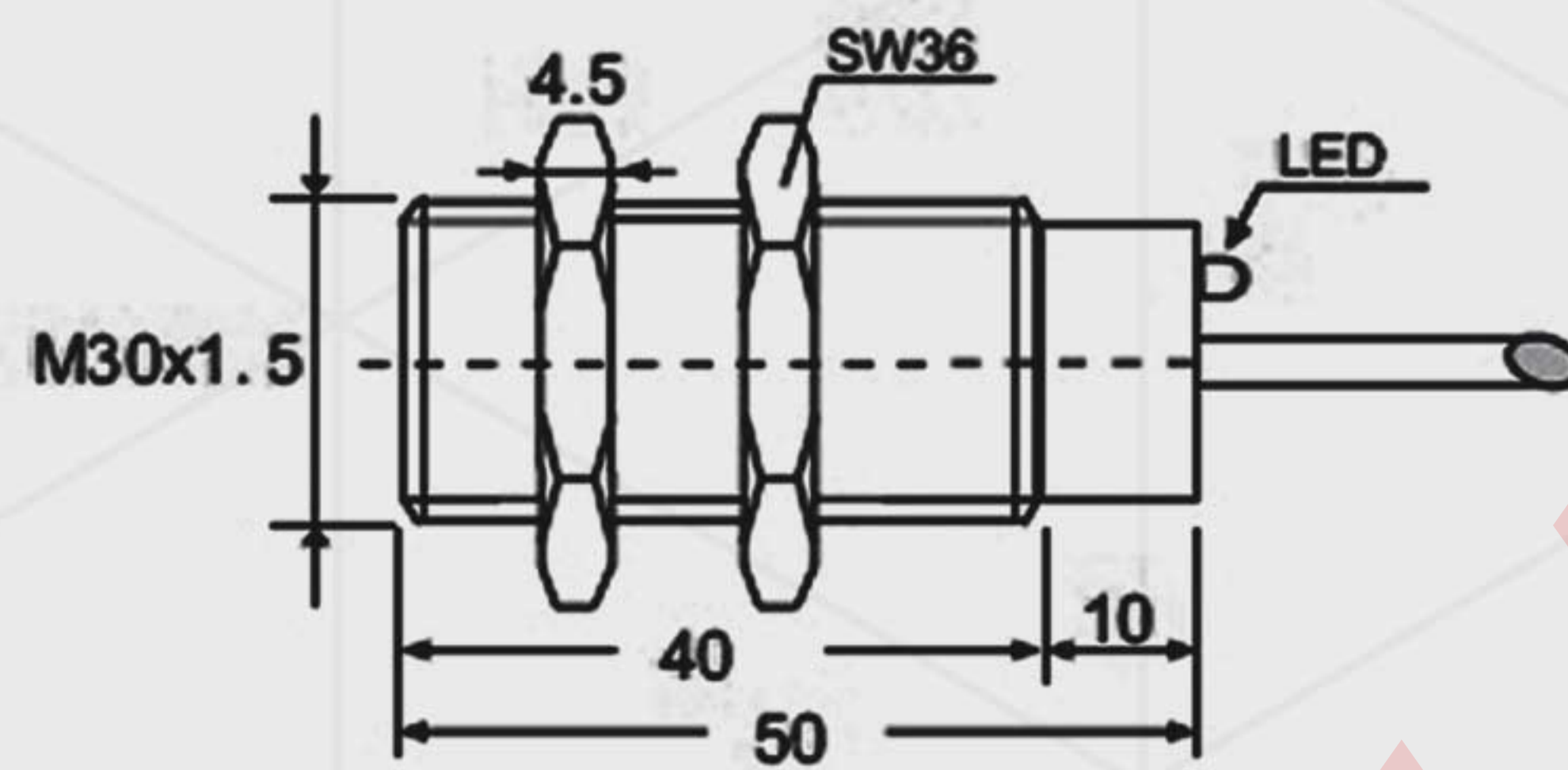
Model selection

AC 2-wire NO	TR18-5AO	TR18-8AO
AC 2-wire NC	TR18-5AC	TR18-8AC
DC 3-wire NPN NO	TR18-5DN	TR18-8DN
DC 3-wire NPN NC	TR18-5DN2	TR18-8DN2
DC 3-wire PNP NO	TR18-5DP	TR18-8DP
DC 3-wire PNP NC	TR18-5DP2	TR18-8DP2



2-Wire AC Diagram

► 04 - M30 Lead Type



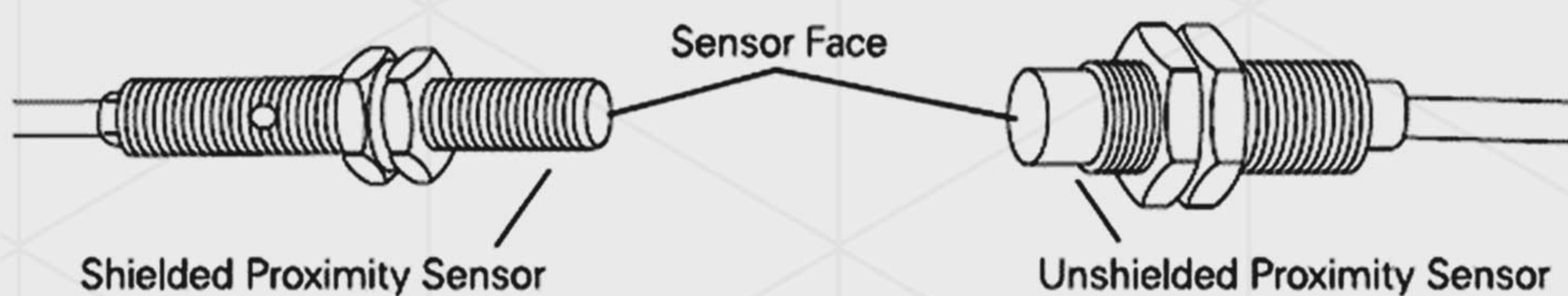
Technical parameter

Boundary dimension	M30*50	M30*50
Install form	Flush mounted	Non-Flush mounted
Detection distance	10mm	15mm
Working voltage	DC:10-30V,AC:20-250V	DC:10-30,AC:20-250V
Working current	DC:200mA,AC:400mA	DC:200mA,AC:400mA
Frequency(HZ)	DC:500,AC:30	DC:400,AC:30
Protection level	IP67	IP67
Ambient temperature	-25°C~+70°C	-25°C~+70°C
Short circuit protection	YES	YES
Polarity protection	YES	YES
Shell material	CuZn-Cr	CuZn-Cr

Model selection

AC 2-wire NO	TR30-10AO	TR30-15AO
AC 2-wire NC	TR30-10AC	TR30-15AC
DC 3-wire NPN NO	TR30-10DN	TR30-15DN
DC 3-wire NPN NC	TR30-10DN2	TR30-15DN2
DC 3-wire PNP NO	TR30-10DP	TR30-15DP
DC 3-wire PNP NC	TR30-10DP2	TR30-15DP2

CE



05

PLC

(TVP-14SS211T/R, TVP-16SP11T/R, TVP-PS02, TVP-PS04)



Created by



▶ TVP-14SS211R/T

- **MPU points:** 14 (8DI + 6DO)
- **Max. I/O points:** 494 (14 + 480)
- **Program capacity:** 8K steps
- **COM port:** Built-in RS232 & RS485 ports, compatible with Modbus ASCII/RTU protocol. Can be master or slave
- **High-Speed pulse output:** Supports 4 points (Y0~ Y3) of independent high-speed (max. 10KHZ) pulse output
- **Supports PID auto-tuning:** TVP-SS2 saves parameters automatically after the PID auto temperature tuning is completed
- Built-in High-speed counters

1-Phase 1		1-Phase 2		2-Phase 2	
Points	Bandwidth	Points	Bandwidth	Points	Bandwidth
4/4	20KHZ/10KHZ	2	20KHZ	2/2	10KHZ/5KHZ

- تعداد ۸ ورودی و ۶ خروجی رله ای (8DI + 6DO) در مجموع ۱۴ ورودی خروجی
- قابلیت افزودن تا ۴۸۰ ورودی و خروجی اضافه
- ظرفیت برنامه نویسی ۸۰۰۰ استپ
- دارای پورت RS-232 و RS-485 داخلی سازگار با پروتکل مدباس ASCII/RTU در هر دو حالت master و slave
- دارای چهار خروجی پالس Y۰ تا Y۳ تا فرکانس ۱۰ کیلو هرتز در مدل ترانزیستوری
- پشتیبانی از تابع PID در مد Auto-tuning (مدل SS2 قادر است پس از اجرای تابع PID در مد Auto tuning مقادیر حاصله را در حافظه ماندگار ذخیره کند)
- دارای شمارنده سرعت بالای داخلی

TVP-16SP11R/T

- **No. Of Inputs:** 8 digital Input
- **No of Outputs:** 8 digital Output
- **Power Supply:** 24VDC (-15%~20%) (the counter-connection protection towards the DC input power polarity is included).
- **Indicator:** Power and Low voltage LEDs
- **Operating condition:** 0 °C~55 °C (temperature), 50~95% (humidity)
- **Storage condition:** -40 °C~70 °C (temperature), 5~95% (humidity).
- **Weight:** 162gr
- Within 5ms of the momentary power loss, the device will keep on operating.



TVP-PS02/04

Item	TVP-PS02/04
Power Input	100~240VAC(-15%+10%),50/60HZ
Output Power	24VDC(±3%),output current:2A max/4.2A
Ripple & Noise	Under 240mV _{p-p} Typical at full load
Efficiency	78%~87% Typical at full load
Over Load/Short Circuit Protection	Auto recovery
Grounding	The diameter of grounding wire cannot be smaller than the wire diameter of terminals L and N (All PLC units should be grounded directly to the ground pole)
Operation/Storage Environment	Operating:0°C~55°C(temperature),50~95%(humidity) Storage:-40°C~70°C(temperature),5~95%(humidity).
Weight(gr)	PS02:250gr PS04:380gr





Items	Spec.	Input Point	
Input NO.		X0~X3	X4~X7
Input type		DC(SINK or SOURCE)	
Input current(±10%)		24VDC,5mA	
Input impedance		4.7KΩ	
Max.frequency		20KHZ	10KHZ
Action level	off → on	>15VDC	
	on → off	<5VDC	
Response time	off → on	<10μs	<20μs
	on → off	<20μs	<50μs
Filter time		Ajustable Within 0~20ms by D1020(Default:10ms)	

Items	Spec.	Output Point		
		Relay	Transistor	
Output NO.		Y0~Y5	Y0~Y3	Y4,Y5
Max.frequency		1HZ	10KHZ	1KHZ
Working voltage		250VAC,<30VDC	5~30VDC	
Max.load	Resistive	1.5A/1 point(5A/COM)	0.5A/1 point(3A/COM)	
	Inductive		15W(30VDC)	
	Lamp	20WDC/100WAC	2.5W(30VDC)	
Response time	off → on	Approx.10ms	20μs	100μs
	on → off		30μs	100μs

06

Servo Motor

(0.4KW ~ 11KW) 220V

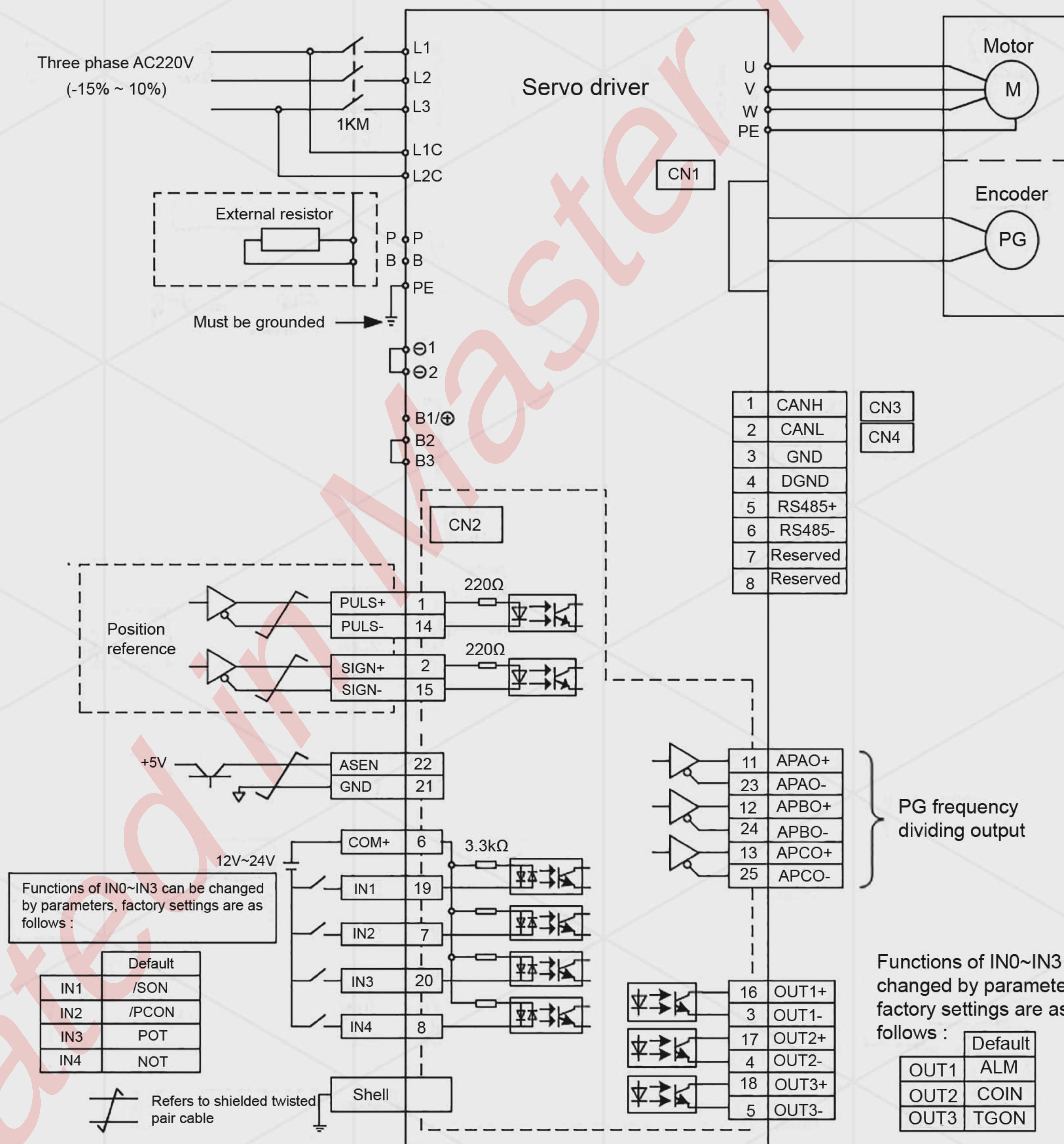


Technical Specifications

- **Input voltage:** single or three-phase 220VAC (-15~+10%), 50~60HZ
- **Control technology:** IGBT PWM control, sinusoidal current drive mode
- **Control mode:** Position, Torque, and Speed Control
- **Maximum input pulse frequency:** Symbol + pulse sequence, CW + CCW pulse sequence: 500Kpps
- The current loop frequency response is at 2.5kHz and the speed loop frequency response is at 1.6kHz
- It supports many brands of encoders with a maximum precision up to 23bit, and the high-resolution encoder meets the requirement of high precision positioning control and smooth operation.
- With a minimum thickness of only 42mm, the product is lighter and saves installation space.
- Real-time automatic gain control and adaptive filter
- Modbus communication, RS485, RS232 Interfaces
- Protection Functions of Over current, over voltage, under voltage, overload, etc.
- The motor protection grade of IP65 greatly improves the environmental resistance;

- ولتاژ ورودی ۲۲۰ ولت تکفاز و سه فاز
- تکنولوژی کنترلی: IGBT PWM control
- دارای مدهای TORQUE, POSITION, SPEED
- دارای ورودی پالس 500KPPS مناسب با کنترلهای CNC
- پاسخ فرکانسی ۲/۵ کیلوهرتز و پاسخ حلقه سرعت ۱/۶ کیلوهرتز
- مجهز به انکدر ۲۳ بیت مطلق یا افزایشی برای افزایش دقت موقعیت یابی و عملکرد نرم تر
- ابعاد بسیار کوچک در مقایسه با نمونه های مشابه
- تنظیم ضرایب کنترلی و فیلتراسیون آنلاین
- مجهز به شبکه Modbus RS485/ RS232
- پارامترهای حفاظتی اضافه جریان، اضافه ولتاژ، کاهش ولتاژ، اضافه بار و ...
- موتور با IP۶۵

Wiring Diagram



07

Soft Starter

(22KW ~ 600KW) 380V



- جریان کاری اصلی: 40A~1200A
- ولتاژ کاری اصلی: AC380 (+10%-15%)
- منبع تغذیه حلقه کنترلی: 110-220V±15%(0.5A)AC/DC
- فرکانس کاری ورودی: 50Hz/60Hz (±2%)
- ماکزیمم زمان راه اندازی: 1~120S
- ماکزیمم زمان استوپ: 0~60S
- قابلیت جداسازی کی پد
- دارای 3 عدد خروجی رله ای
- دارای یک عدد خروجی آنالوگ 4 تا 20 میلی آمپر
- قابل استفاده برای فن، پمپ، بالمیل، کانوایر، کمپرسورها و سایر تجهیزات با بار سنگین
- جایگزین مناسب برای تجهیزات راه اندازی سنتی
- تنظیمات آسان با داشتن قابلیت پارامتردهی سه گانه
- شناسایی خطای دینامیک به منظور یافتن سریع و راحت علت خطا
- حفاظت در برابر اضافه جریان، جریان های سه فاز نامتقارن، اضافه دما، قطعی فاز و اضافه بار
- مجهز به پروتکل ارتباطی مدباس با اینترفیس RS485

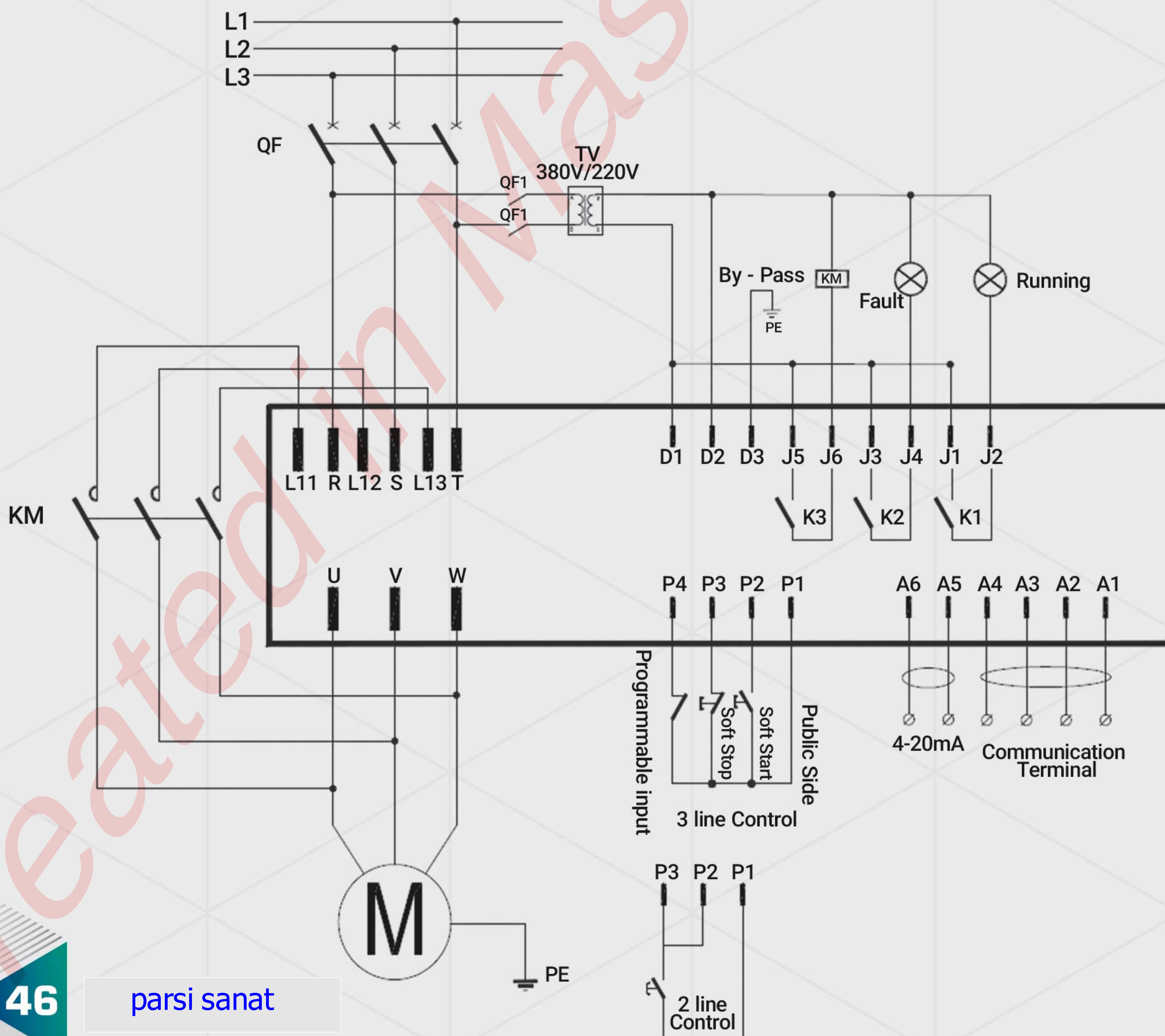
Technical Specifications

- Main loop work current: 40A~1200A
- Main loop work voltage: AC380 (+10%-15%)
- Control loop power supply: 110-220V±15% (0.5A) AC/DC
- Main loop frequency: 50Hz/60Hz (±2%)
- Soft starting rising time: 1~120S
- Soft stop time: 0~60S
- Removable keypad using display box communication extension wire (Shield wire)
- 3 output contactors using for bypass contactor, fault output, and running output
- One 4-20mA analogue signal output terminal
- The equipment could be widely applied to fan, pump, conveyor and compressor and other heavy load equipment
- Excellent product to substitute traditional startup equipment such as self-coupling voltage reduction, magnetron voltage reduction and so on.
- Parameter setting adopts Tree-menu management for easy checking & modify
- Dynamic fault record function which is convenient for seeking the reason of fault
- Over current, three-phase current imbalance, overheat, phase loss and motor overload protection
- Standard Modbus communication protocol RS485

Outline Wiring Diagram



Outsie Wiring Diagram



parsisanat



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