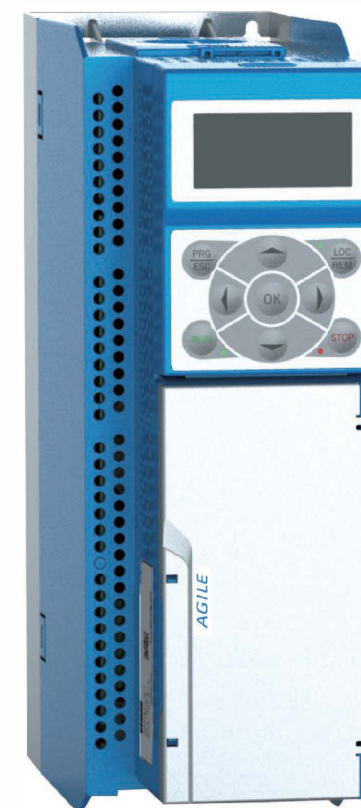




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zavoshelectric.ir

A1 variable frequency drive



A1 Variable
Frequency
Drive

Modified date 06/2024
Selection Sample C05.0040



CONTACT US:

www.zavoshelectric.ir

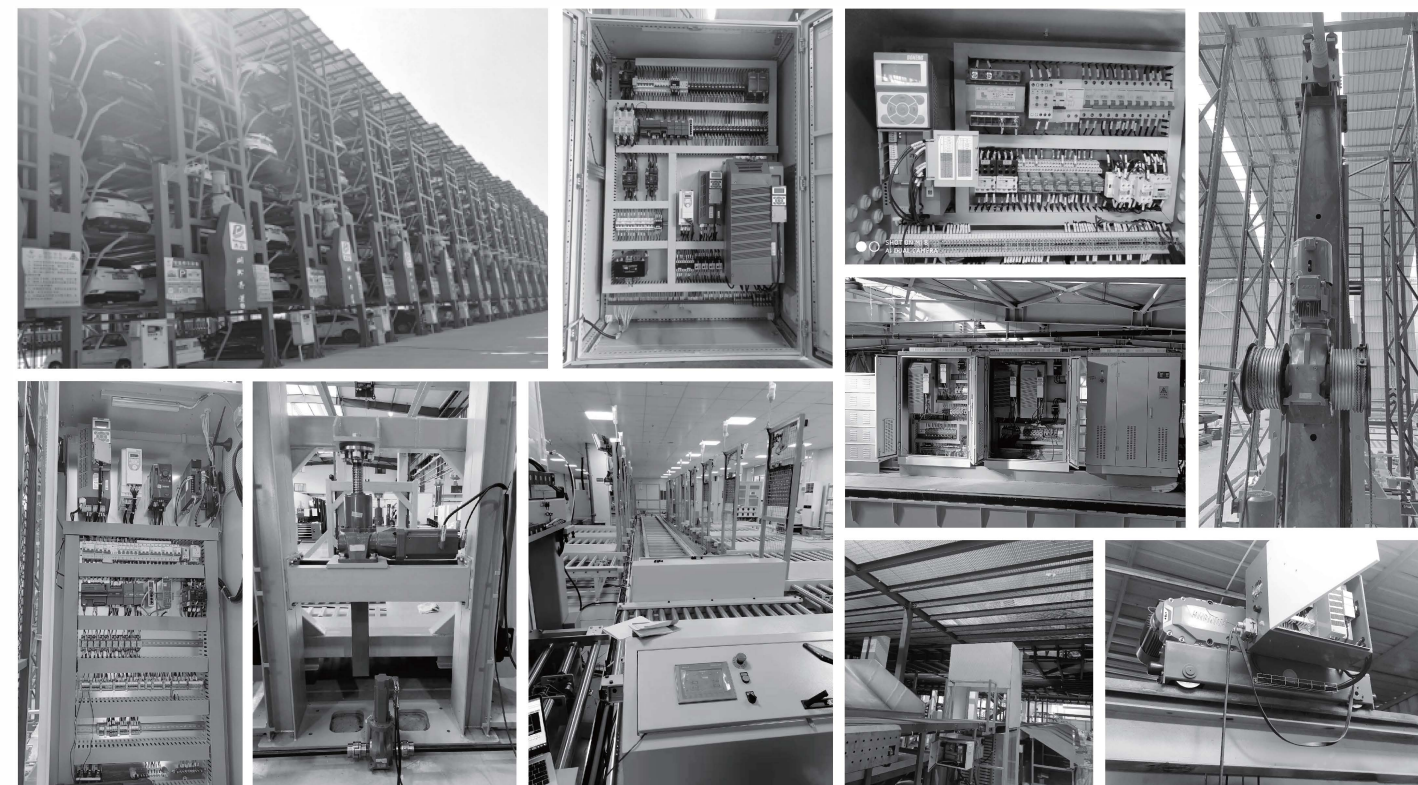
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Transmission

A1 Variable Frequency Drive

- ◆ Support speed control and torque control for IM and PM motors
- ◆ Support multiple communication protocols: Modbus, CANopen, PROFINET
- ◆ Provide free programming module and parameter interconnection, which can be combined and matched freely according to the on-site process
- ◆ Integrated characteristic functions, such as PID controller, adaptive speed with load, anti sway control, Smooth rotation, etc
- ◆ Status display via LCD Operator Panel in English, Support commissioning software based PC—REXON DriveSoft
- ◆ Slim booksize structure to meet side-by-side installation requirements in electrical cabinets
- ◆ Built-in A-class filter(optional), and external filter, meeting the strict electromagnetic level requirements
- ◆ Screw free crimping type of IO terminals can be connected and maintained without screw drive
- ◆ Detachable power terminal, power cable easy to installed conveniently



Products are widely used in Cranes, stackers, hoists, extruders, grinders, mixers, crushers, wire drawing machines, plate rolling machines, centrifuges, material transportation, handling, fan pumps and other fields. REXON Transmission company headquarters and major regional technical experts and regional offices of the application engineers, after-sales service technicians dedicated to provide you with comprehensive technical advice and perfect service.

Catalogue

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1 Agile series drivers

1.1 Summary

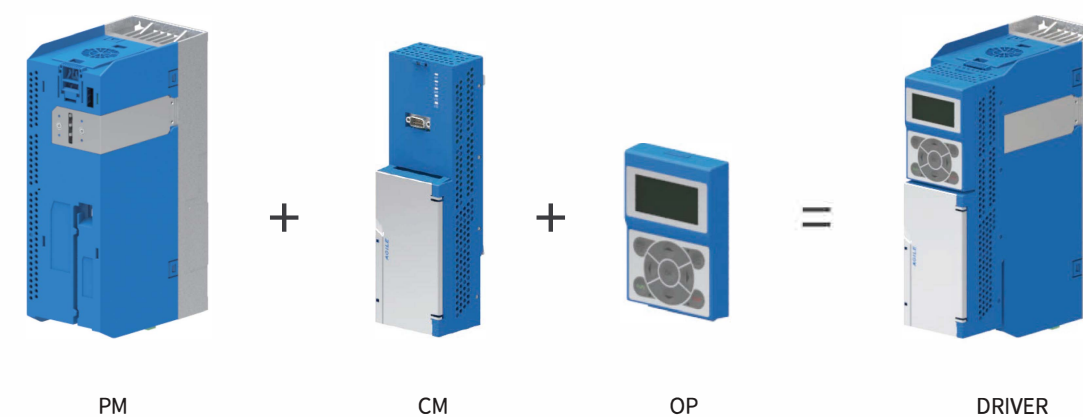
Agile series inverters are designed to provide high-precision speed /torque control and satisfy servo position control for AC motors.

Overall structure

Agile series drivers consist of different functional modules, the main modules are showing as follows:

- ◆ Power Module(PM)
- ◆ Control Module(CM)
- ◆ Operation Panel(OP)(Optional)
- ◆ Other Options

Power Module (PM) and Control Module (CM) are two necessary modules of the driver.



Power Module

Power module range is 0.75KW ~ 250kw, through high-performance microprocessor control, the use of high reliability IGBT, and advanced pulse width modulation technology, making motor speed regulation extremely flexible and reliable, perfect protection function for the power module and motor to provide reliable protection.

Control Module

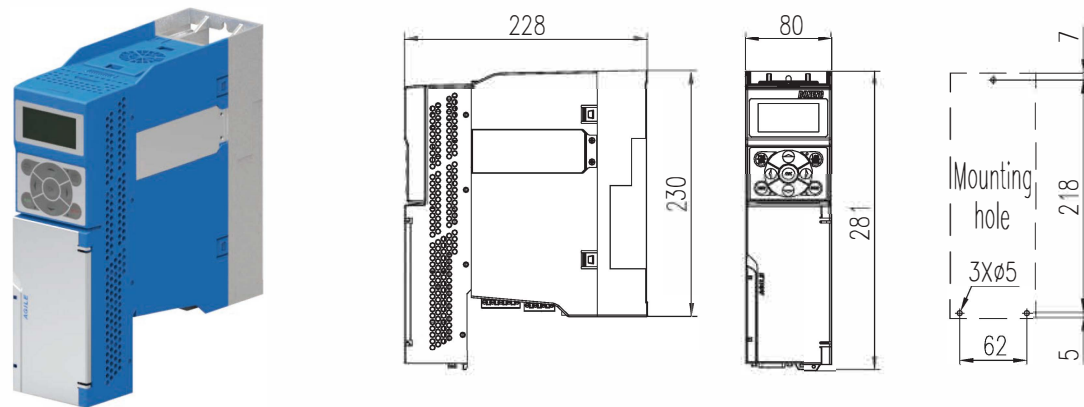
Control module supports a variety of ways to control and monitor the power module and the connected motor, supports a variety of user control interfaces such as local, remote IO and communication, as well as a variety of control modules, and provides flexible combination and collocation for customers' simple or complex applications.

Operation Panel

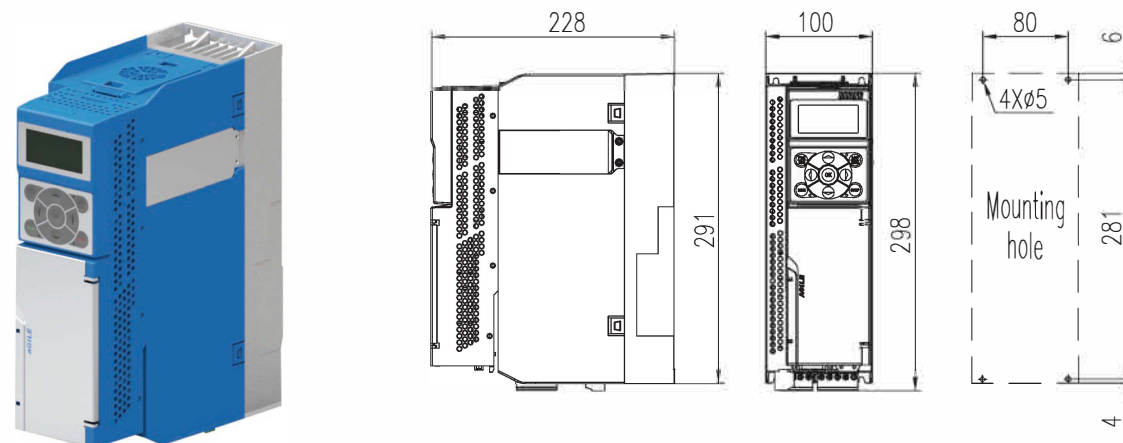
Operation panel is used for debugging, supervising and setting input parameters of the driver. LCD screen can display four lines, each line up to 8 characters or 16 letters.

Overall outline dimensions and installation dimensions
PM25+CM25+OP25 overall outline dimensions
and installation dimensions B1~B6 (Unit:mm)

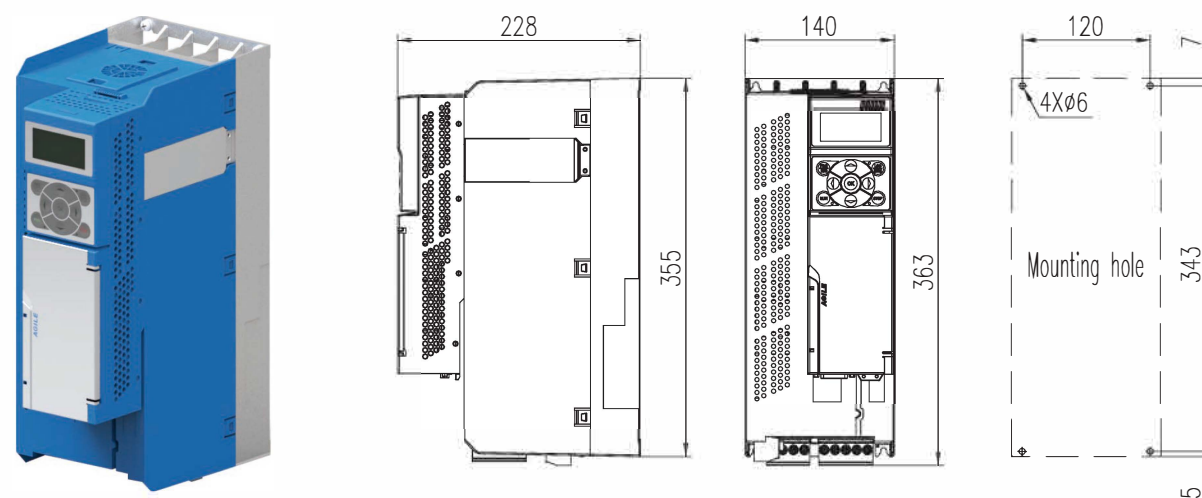
◆B1 (0.75 kW~3 kW)



◆B2 (4 kW~7.5kW)

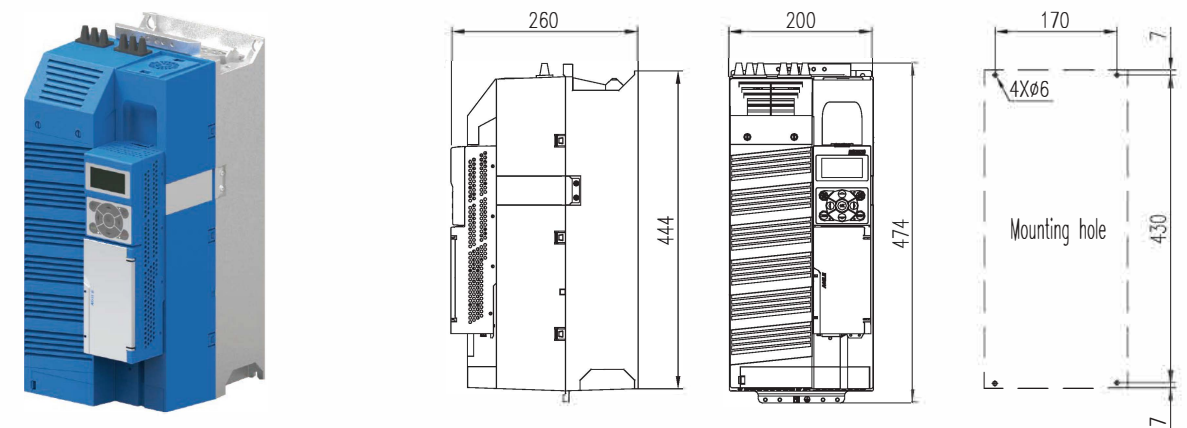


◆B3 (11 kW~15kW)

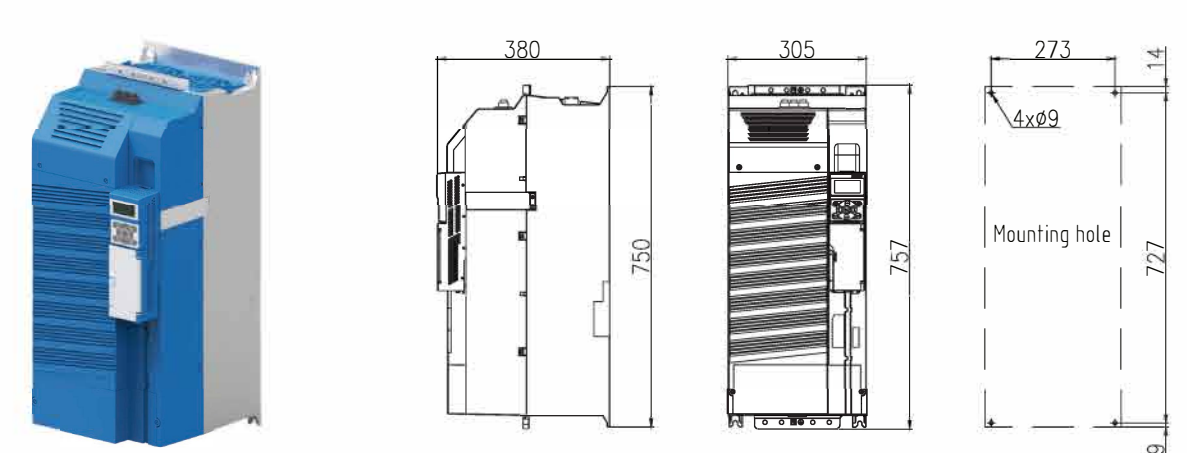


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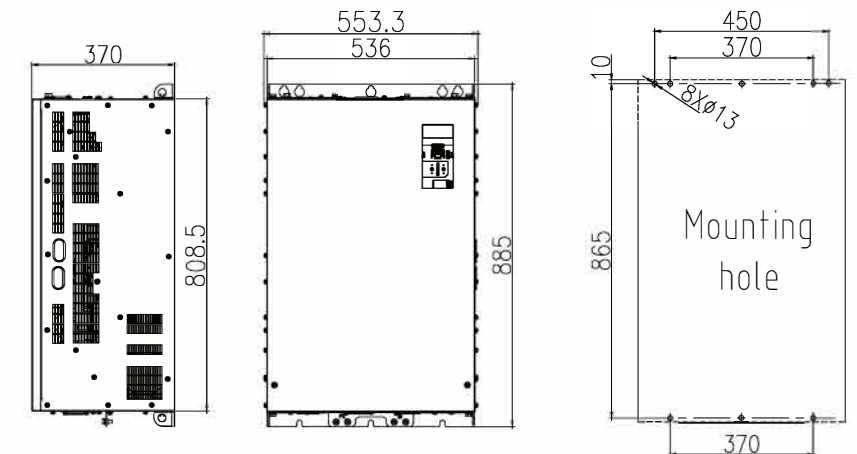
◆B4 (18.5 kW~37kW)



◆B6 (45 kW~132kW)

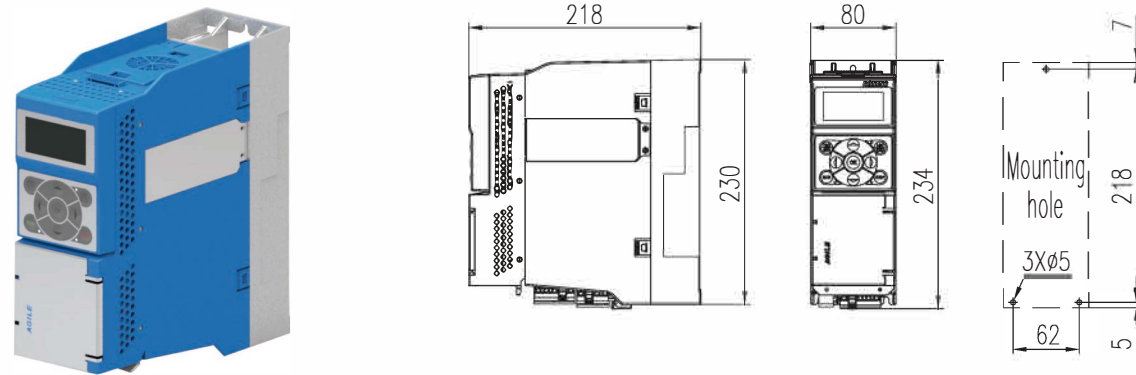


◆B7(160kW ~ 250kW)

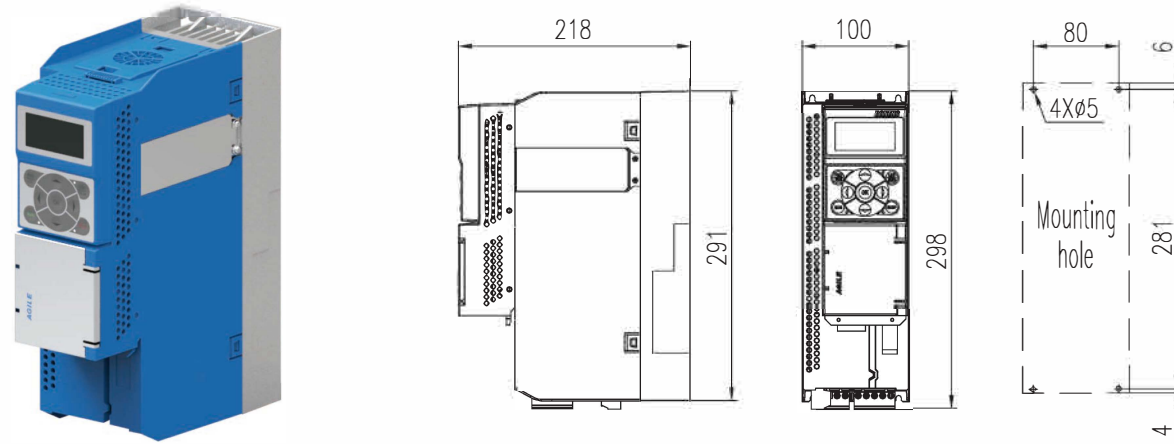


PM25+CM22+OP25 overall outline dimensions
and installation dimensions B1~B6 (Unit:mm)

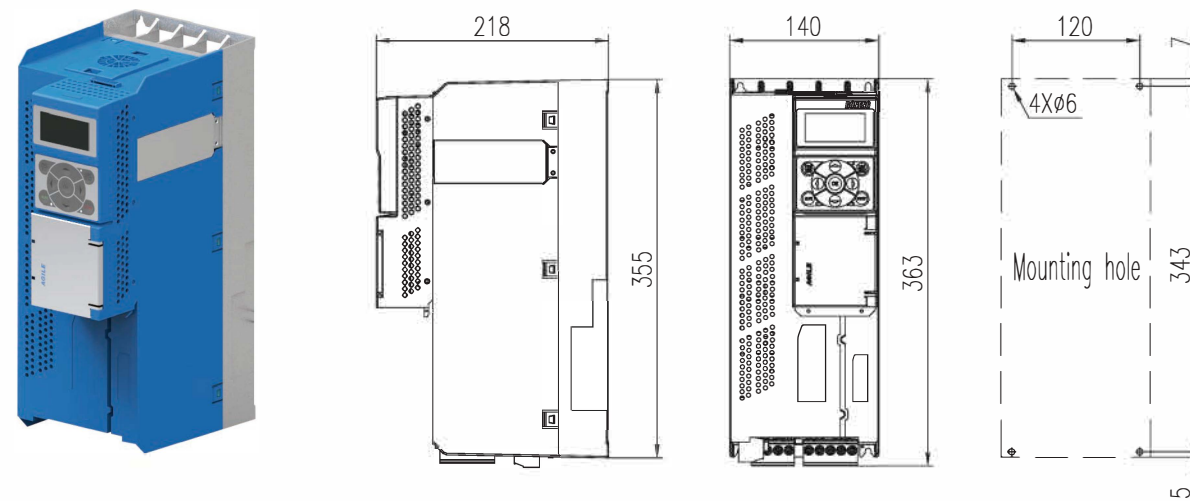
◆B1 (0.75 kW~3 kW)



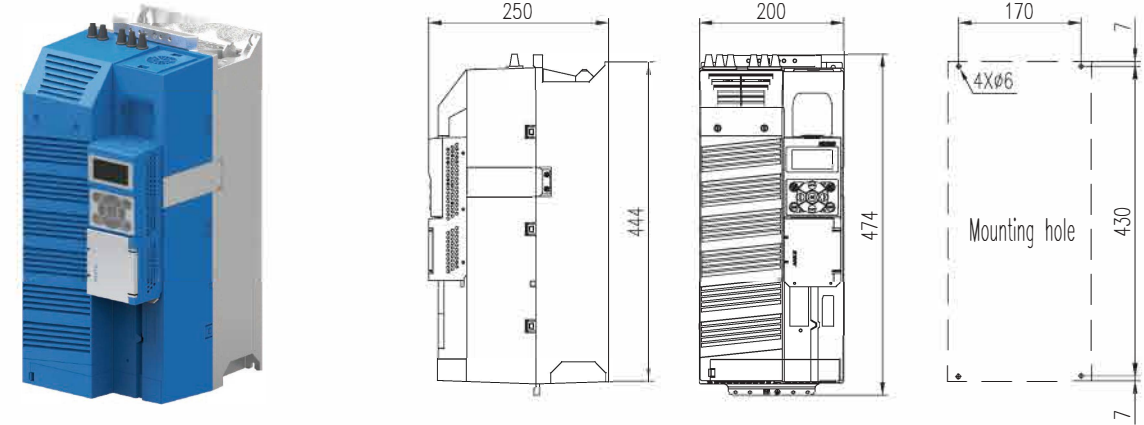
◆B2 (4 kW~7.5kW)



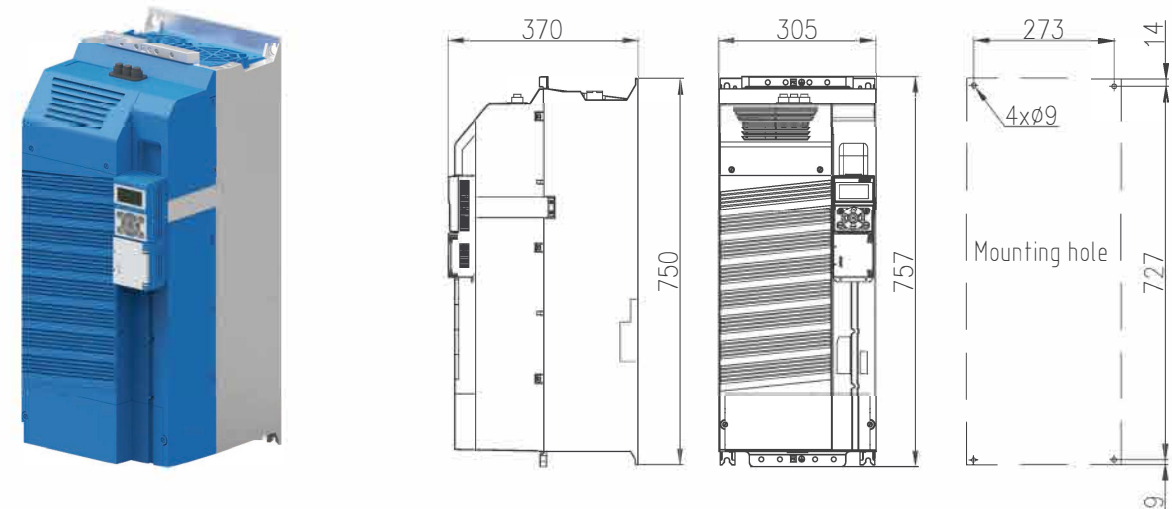
◆B3 (11 kW~15kW)



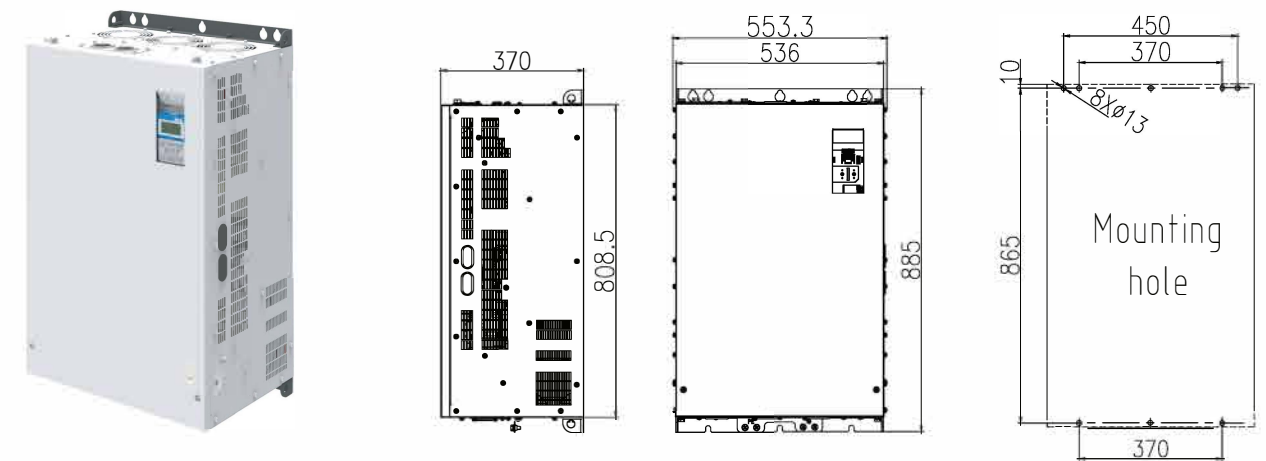
◆B4 (18.5 kW~37kW)



◆B6 (45 kW~132kW)

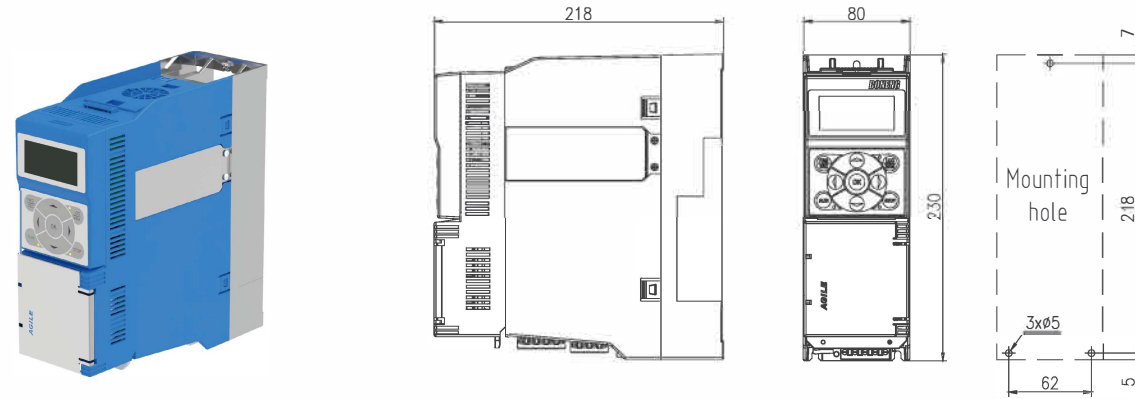


◆B7(160kW ~ 250kW)

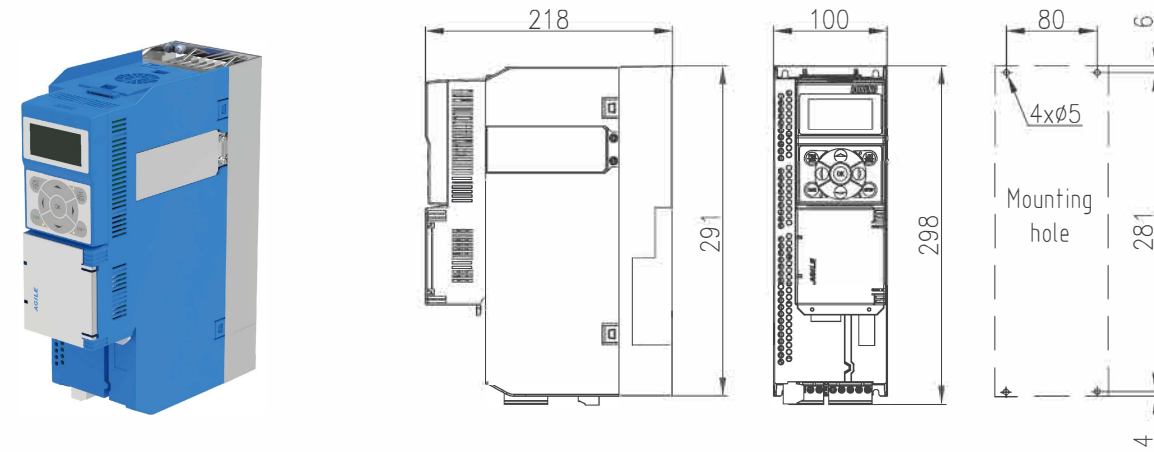


PM25+CM23+OP25 overall outline dimensions
and installation dimensions B1~B6 (Unit:mm)

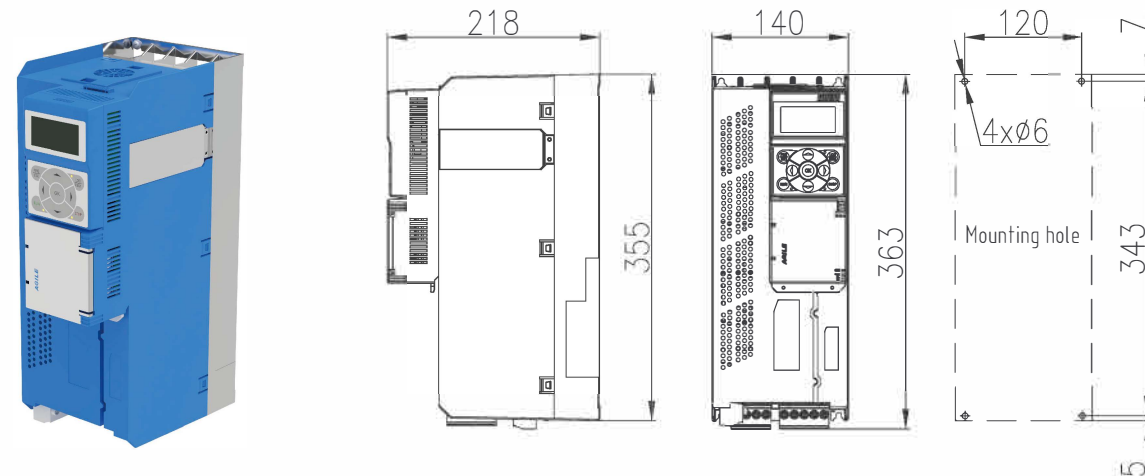
◆B1 (0.75 kW~3 kW)



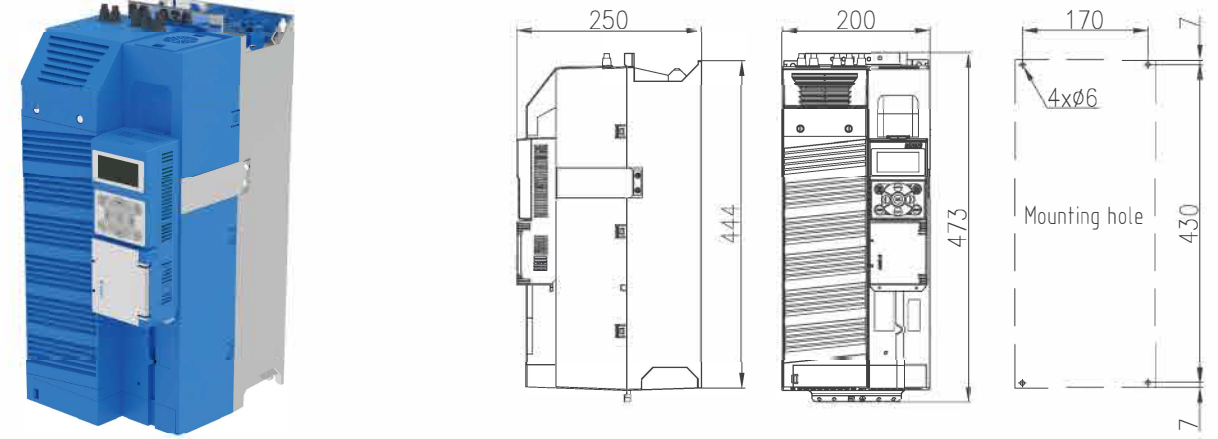
◆B2 (4 kW~7.5kW)



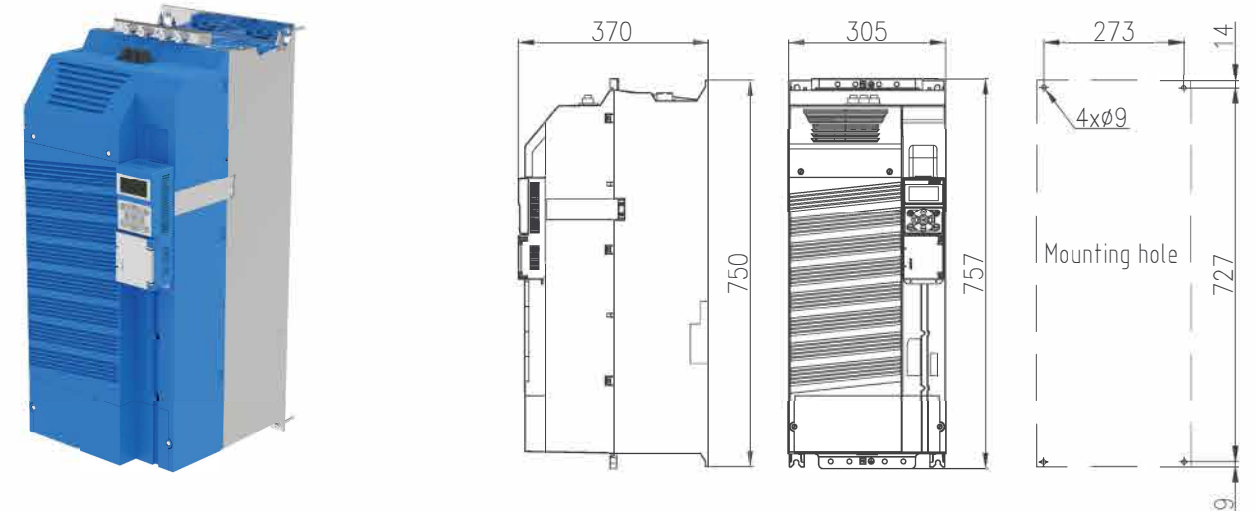
◆B3 (11 kW~15kW)



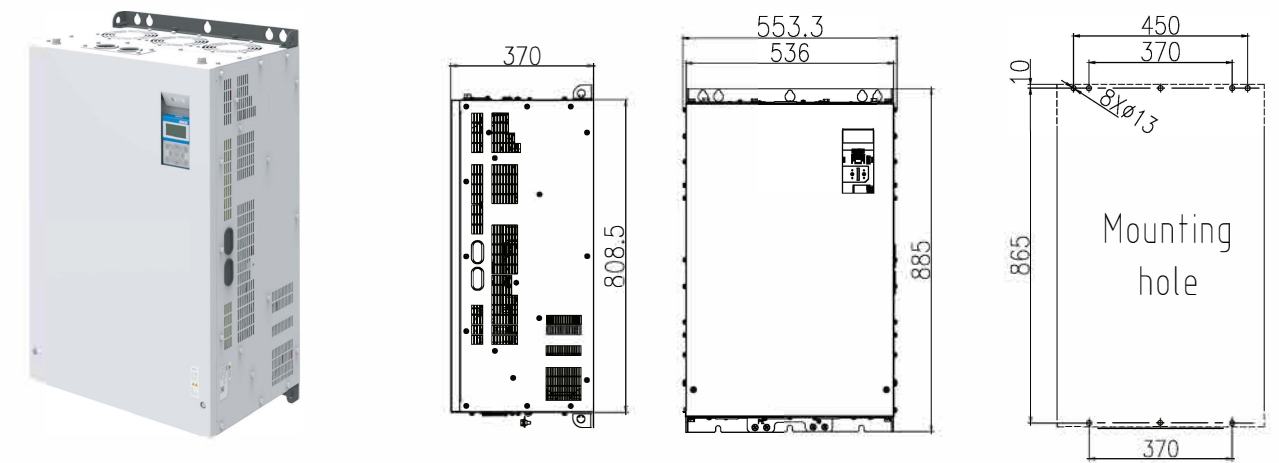
◆B4 (18.5 kW~37kW)



◆B6 (45 kW~132kW)



◆B7(160kW ~ 250kW)

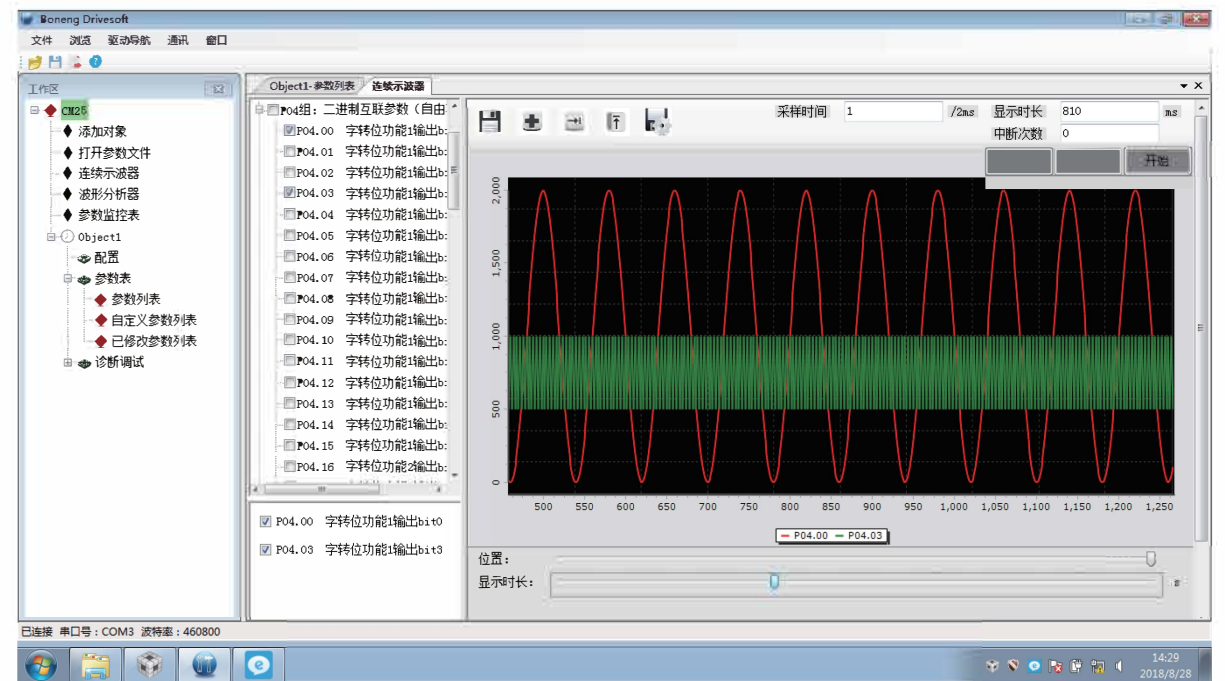
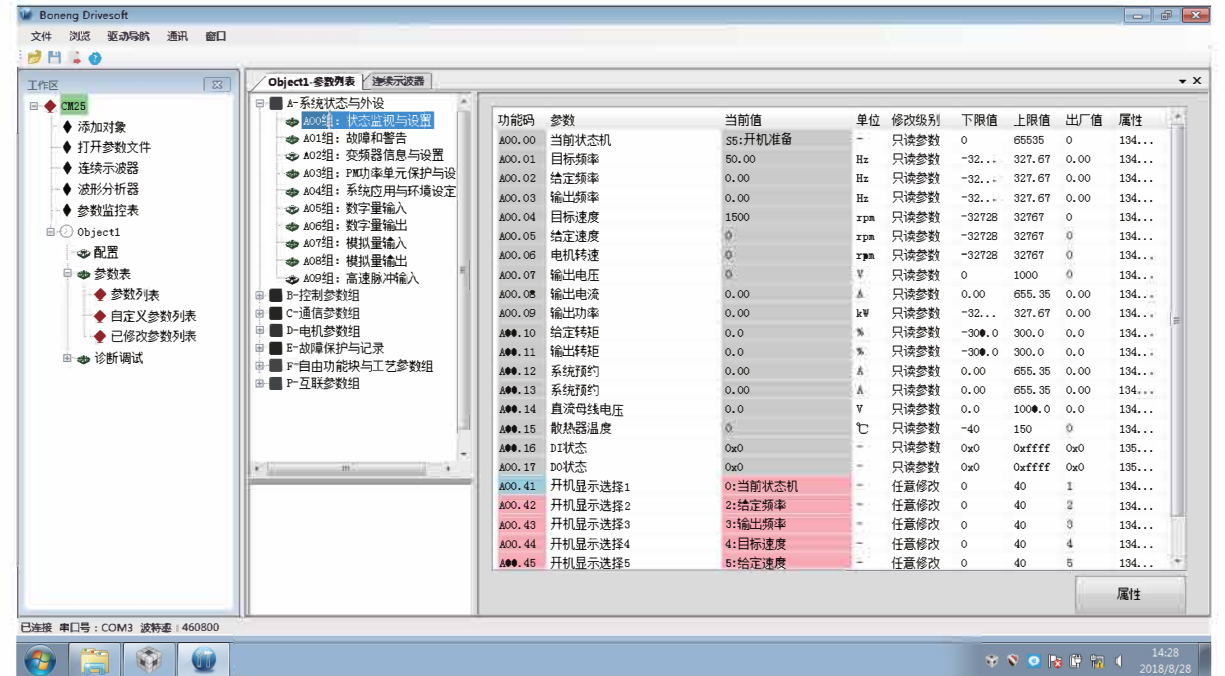


1.2 Applications

Drive combination	Power	Drivable motor types	Main interfaces and functions	Product application features
PM25+CM25	0.75kW-250kW	AC asynchronous motor AC synchronous motor	DI	10ch
			DO	2ch
			AI	2ch
			AO	2ch
			Relay	2ch
			Encoder interface	Incremental
			Motor temperature interface	OK
			USB interface	OK
			Modbus /CAN	OK
			Operation panel interface	OK
PM25+CM22	0.75kW-250kW	AC asynchronous motor AC synchronous motor	Linear/parabolic/programmable V/F control	OK
			Sensorless speed/torque vector control	OK
			Speed/torque vector control with sensor	OK
			DI	5ch
			AI	2ch
			AO	1ch
			Relay	1ch
			Encoder interface	Incremental
			Modbus	OK
			Operation panel interface	OK
PM25+CM23	0.75kW-250kW	AC asynchronous motor AC synchronous motor	Linear/parabolic/programmable V/F control	OK
			Sensorless speed/torque vector control	OK
			Speed/torque vector control with sensor	OK
			DI	6ch
			Relay	2ch
			Encoder interface	Incremental
			Modbus PROFINET	OK
			Operation panel interface	OK
			Sensorless speed/torque vector control	OK
			Speed/torque vector control with sensor	OK

1.3 PC-Drivers connection

If the appropriate driver software is installed, the PC can control and debug the driver directly through the operation panel of the control module. This software can be downloaded from the official website of REXON . PC software and OP25 operation panel can not be used at the same time because they share the operation panel interface of control module. Later, PC software will be developed to use USB interface to support the sharing of PC software and OP25. Driver debugging software can provide menu help wizard for debugging, optimization and diagnosis.



1.4 Technical parameters

If no otherwise instructions, then Agile series drivers will meet the following technical parameters.

Mechanical parameters		
Vibration		
•Transportation		Class 2M3 comply with IEC 60068-2-6
•Operation		Class 3M4 comply with IEC 60068-2-6
		10Hz ~ 58hz: constant amplitude 0.075 mm
		58hz ~ 200Hz: constant acceleration = 9.81 M / S2 (1g)
Impact		
•Transportation		Class 2M2 comply with IEC 60068-2-27
•Operation		Class 3M4 comply with IEC 60068-2-27
		49 m/s2 (5g) /30 ms
Environment condition		
Protection level		Class I (system with earthing protection) and class III (PELV) correspond to IEC 61800-5-1;
Impact protection		Comply with IEC 61800-5-1 when used correctly
Allowable environment and cooling medium temperature of power components of power module during operation		
•Heavy duty (HD)		No capacity reduction at -10°C~+50°C,see capacity reduction curve at >50°C~60°C
•Light duty (LD)		No capacity reduction at -10°C~+40°C,see capacity reduction curve at >40°C~60°C
Allowable environment and cooling medium temperature of control module and additional system components during operation		-20°C~+50°C
Climatic and environmental conditions		
•Preservation		
•Transportation		2K4 according to IEC60721-3-2, temperature 40 °C~+70°C, maximum air humidity is 95% at 40°C
•Operation		3K5 conforming to IEC60721-3-3, no condensation, water splashing and icing (IEC 60204, Part 1)
Environmental standards / hazardous chemicals		
•Preservation		Comply with 1C2 standard of IEC60721-3-1
•Transportation		Comply with 2C2 standard of IEC60721-3-2
•Operation		Comply with 3C2 standard of IEC60721-3-2
Standard		
Standards met		UL, CE
CE certification		Comply with low voltage specification 73/23/EEC and mechanical specification 98/37/EC
EMC standard		
•No built in A-class incoming line filter		No power filter function
•Only built in A-class incoming line filter		Comply with class 2 conducted interference IEC61800-3
•No built in A-level incoming line filter, and the customer has its own B-level incoming line filter		Comply with class 2 conducted interference IEC61800-3
•Built in A-level incoming line filter, and the customer has its own B-level incoming line filter		Comply with class 2 conducted interference IEC61800-3

2 PM25 Power Module

2.1 Summary



PM25 Power Module sizes B1 to B7

PM25 power modules are designed for applications with safety protection requirements. It is combined with the control module with safety protection function to form a driver with integrated safety protection function.

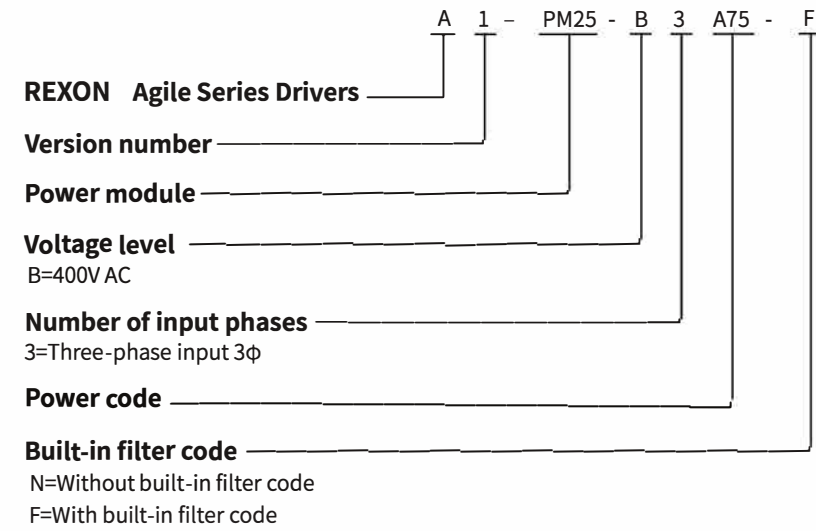
PM25 power modules have enough control range for DC bus voltage, which can easily ensure the change of applied voltage. For example: dynamic buffering function (maintaining the voltage of DC bus by regenerating the kinetic energy of load to DC bus) or controlling and slowing down safely by using the kinetic energy generated by load after power failure. In addition, several PM25 power modules can be electrically coupled in this way (common DC bus).

The specifications of PM25 power modules B1 to B6 can be divided into two types: built-in A-level filter and no built-in A-level filter. The power modules PM25 can operate in IT power grid, TN power grid and TT power grid, but the power modules with A-level incoming line filter or user's own B-level incoming line filter are not allowed to operate in TN power grid with grounding phase line and TT power grid without grounding star point.

PM25 power modules B1 to B6 are integrated with built-in brake unit (brake chopper), and the external brake resistance can be directly connected to the actuator through DC+ and R.

2.2 Selection ordering data

Model indication method



Ordering data

380~480V 3AC输入				380~480V 3AC input	
LD mode		HD mode		Dimensions	Model
Rated power (kW)	Rated current (A)	Rated power (kW)	Rated current (A)		Without built-in filters
0.75	2.2	0.75	2.2	B1	A1-PM25-B3A75-N
1.5	4.1	1.1	3.1		A1-PM25-B3B15-N
2.2	5.9	1.5	4.1		A1-PM25-B3B22-N
3	7.7	2.2	5.9		A1-PM25-B3B30-N
4	10.2	3	7.7	B2	A1-PM25-B3B40-N
5.5	13.2	4	10.2		A1-PM25-B3B55-N
7.5	18	5.5	13.2		A1-PM25-B3B75-N
11	26	7.5	18	B3	A1-PM25-B3C11-N
15	32	11	26		A1-PM25-B3C15-N
18.5	38	15	32	B4	A1-PM25-B3C18-N
22	45	18.5	38		A1-PM25-B3C22-N
30	60	22	45		A1-PM25-B3C30-N
37	75	30	60		A1-PM25-B3C37-N
45	90	37	75	B6	A1-PM25-B3C45-N
55	110	45	90		A1-PM25-B3C55-N
75	145	55	110		A1-PM25-B3C75-N
90	178	75	145		A1-PM25-B3C90-N
110	205	90	178		A1-PM25-B3D11-N
132	250	110	205		A1-PM25-B3D13-N
160	302	132	250	B7	A1-PM25-B3D16-N
200	370	160	302		A1-PM25-B3D20-N
250	477	200	370		A1-PM25-B3D25-N

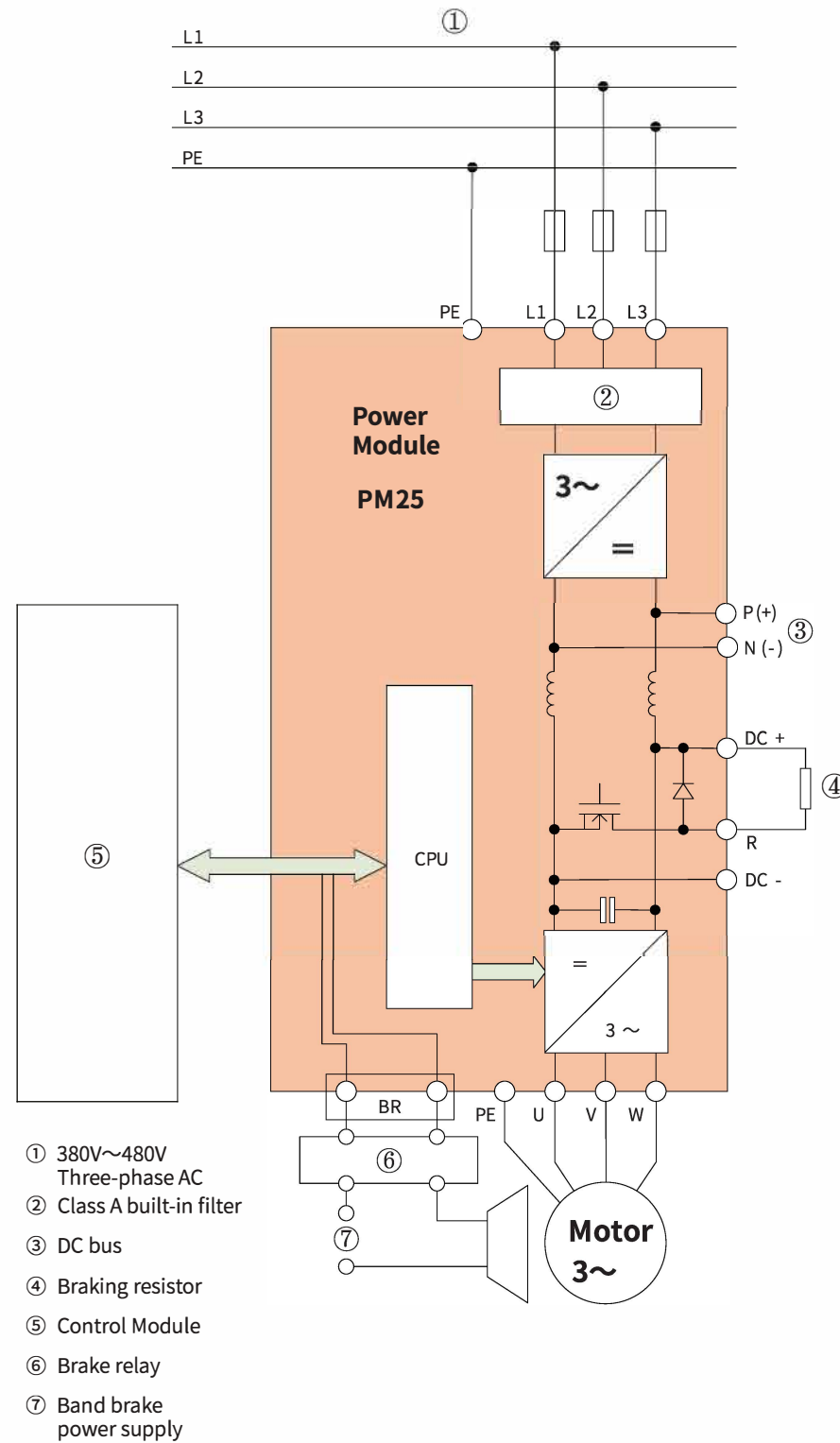
1. For power module with filter, consulting manufacturer

2.3 Electrical connection

PM25 power module has the following standard interfaces:

- ◆ PM-Interface is used for the connection between PM25 power module and Control module.
- PM25 power module provides power for the Control module through an integrated power plug-in.
- ◆ Connect the interface DC + and R of external braking resistor.
- ◆ The motor is connected by pressing screws or screws.
- ◆ 2×PE (earthing protection) connection.

Electrical connection (continued)



PM25 power module electrical wiring diagram
(with or without built-in filter)

2.4 Technical parameters

Technical parameters of PM25 power module		
Input voltage	380~480V 3AC ±10%	
Power requirements	Short circuit voltage Uk	No special needs
Input Frequency	47~63Hz	
Output Frequency	V/F Control	0~300Hz
	Vector Control	0~200Hz
Carrier Frequency	4kHz(≤90KW), 2kHz(≥90KW)	For other higher carrier frequencies, see the reduced capacity data table
Power Factor	0.95	
Controller Efficiency	95~97%	
Carrier Frequency	Heavy duty(HD)	1.5 times the rated output current for 1 minute, 2 times the rated output current for 3 seconds, and the cycle is 10 minutes
	Light duty(LD)	1.2 times the rated output current for 1 minute, 1.5 times the rated output current for 3 seconds, and a cycle of 10 minutes
Electromagnetic Compatibility	Optional Class A and Class B filters that in accordance with the standard EN 55011	
Possible braking methods	DC braking	
	Compound braking	
	Dynamic braking with integrated braking chopper	
Protection level	IP20	
Operating temperature	Heavy duty(HD)	-10°C to +50°C without derating, >50~60 °C see derating characteristics
	Light duty(LD)	-10°C to +40°C without derating, >40~60 °C see derating characteristics
Storage temperature	-40°C~+70°C	
Relative humidity	<95%RH, condensation not permissible	
Cooling way	Internal air cooling	Power modules with increased air cooling by built-in fans (Partial type)
Installation altitude	No capacity reduction within 1000 meters above sea level, see capacity reduction curve at >1000 meters above sea level	
Standard SCCR	<100 kA	
Protection functions	Undervoltage	
	Overvoltage	
	Overload	
	Earthing fault	
	Short-circuit	
	Motor blocking protection	
	Motor overtemperature	
	Inverter overtemperature	
Standards met	UL、CE	
CE Certification	Complies with Low Voltage Specification 72/23/EEC and Mechanical Specification 98/37/EC	

Technical Parameters (continued)

PM25 power module incoming voltage 380...480V 3AC								
Technical data		A1-PM25-B3A75	A1-PM25-B3B15	A1-PM25-B3B22	A1-PM25-B3B30	A1-PM25-B3B40	A1-PM25-B3B55	A1-PM25-B3B75
Rated output power	Based on (LD) kW	-	1.5	2.2	3	4	5.5	7.5
	Based on (HD) kW	0.75	1.1	1.5	2.2	3	4	5.5
Rated input current	With line reactor A	2.3	4.3	6.1	8	10.4	15.3	18.7
	Without line reactor A	2.6	4.9	7.6	10.2	13.4	17.2	21.9
Rated output current	Based on (LD) A	-	4.1	5.9	7.7	10.2	13.2	18
	Based on (HD) A	2.2	3.1	4.1	5.9	7.7	10.2	13.2
Rated carrier frequency kHz		4	4	4	4	4	4	4
Efficiency η		>0.95	>0.95	>0.95	>0.95	>0.95	>0.95	>0.95
Power loss kW		0.1	0.11	0.14	0.16	0.18	0.24	0.3
Cooling air volume requirement m ³ /s		0.005	0.005	0.005	0.024	0.024	0.055	0.055
Noise level dB(A)		<40	<40	<40	<40	<50	<50	<50
24V DC output power supply (to control unit)		1	1	1	1	1	1	1
Length of cable for braking resistor, max m		15	15	15	15	15	15	15
Line supply connection	L1, L2, L3	Screw terminal						
	conductor cross section: mm ²	1...2.5	1...2.5	1...2.5	1...2.5	2.5...6	2.5...6	2.5...6
Motor connection	U, V, W	Screw terminal						
	conductor cross section: mm ²	1...2.5	1...2.5	1...2.5	1...2.5	2.5...6	2.5...6	2.5...6
DCbus connection (Connection for braking resistor)	DC+, DC-, R	Screw terminal						
	conductor cross section: mm ²	1...2.5	1...2.5	1...2.5	1...2.5	2.5...6	2.5...6	2.5...6
PE connection		M4 screws on the housing				M5 screws on the housing		
Motor cable length, max.	Shielded (m)	50	50	50	50	50	50	50
	Unshielded (m)	100	100	100	100	100	100	100
Degree of protection		IP20	IP20	IP20	IP20	IP20	IP20	IP20
Dimensions	Width(W) mm	80	80	80	80	100	100	100
	Height(H) mm	230	230	230	230	291	291	291
	Depth(D) mm	165	165	165	165	165	165	165
Dimensions		B1	B1	B1	B1	B2	B2	B2
Weight (kg), approx.		1.7	1.7	1.7	1.7	2.8	2.8	2.8

PM25 power module incoming voltage 380...480V 3AC							
Technical data		A1-PM25-B3C11	A1-PM25-B3C15	A1-PM25-B3C18	A1-PM25-B3C22	A1-PM25-B3C30	A1-PM25-B3C37
Rated output power	Based on (LD) kW	11	15	18.5	22	30	37
	Based on (HD) kW	7.5	11	15	18.5	22	30
Rated input current	With line reactor A	26	33	39	46	63	78
	Without line reactor A	32	39	46	53	73	88
Rated output current	Based on (LD) A	26	32	38	45	60	75
	Based on (HD) A	18	26	32	38	45	60
Rated carrier frequency kHz		4	4	4	4	4	4
Efficiency η		>0.95	>0.95	>0.95	>0.95	>0.95	>0.95
Power loss kW		0.4	0.4	0.5	0.7	1	1.3
Cooling air volume requirement m ³ /s		0.055	0.055	0.055	0.055	2x0.055	2x0.055
Noise level dB(A)		<40	<40	<40	<40	<50	<50
24V DC output power supply (to control unit)		1	1	1	1	1	1
Length of cable for braking resistor, max m		15	15	15	15	15	15
Line supply connection	L1, L2, L3	Screw terminal					
	conductor cross section: mm ²	4...10	4...10	4...10	6...25	6...25	6...25
Motor connection	U, V, W	Screw terminal					
	conductor cross section: mm ²	4...10	4...10	4...10	6...25	6...25	6...25
DCbus connection (Connection for braking resistor)	DC+, DC-, R	Screw terminal					
	conductor cross section: mm ²	4...10	4...10	4...10	6...25	6...25	6...25
PE connection		M5 screws on the housing					
Motor cable length, max.	Shielded (m)	50	50	50	50	50	50
	Unshielded (m)	100	100	100	100	100	100
Degree of protection		IP20	IP20	IP20	IP20	IP20	IP20
Dimensions	Width(W) mm	140	140	200	200	200	200
	Height(H) mm	355	355	472	472	472	472
	Depth(D) mm	165	165	237	237	237	237
Dimensions		B3	B3	B4	B4	B4	B4
Weight (kg), approx.		7	7	16	16	16	16

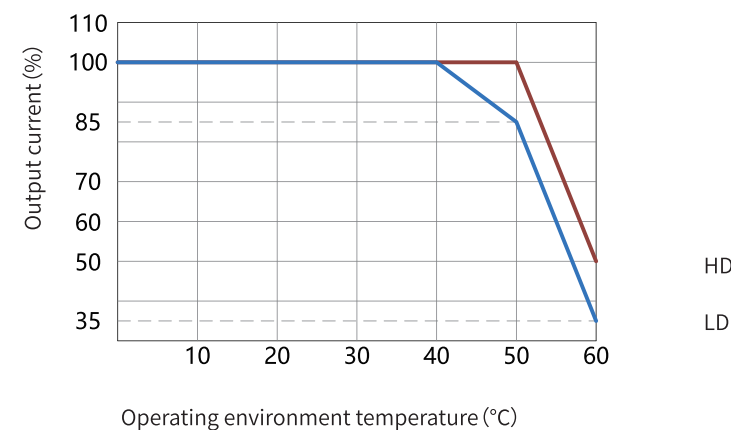
PM25 power module incoming voltage 380...480V 3AC										
Technical data		A1-PM25 -B3C45	A1-PM25 -B3C55	A1-PM25 -B3C75	A1-PM25 -B3C90	A1-PM25 -B3D11	A1-PM25 -B3D13	A1-PM25 -B3D16	A1-PM25 -B3D20	A1-PM25 -B3D25
Rated output power	Based on (LD) kW	45	55	75	90	110	132	160	200	250
	Based on (HD) kW	37	45	55	75	90	110	132	160	200
Rated input current	With line reactor A	86	104	140	172	198	242	245	297	354
	Without line reactor A	78	94	117	154	189	218	297	354	442
Rated output current	Based on (LD) A	90	110	145	178	205	250	302	370	477
	Based on (HD) A	75	90	110	145	178	205	250	302	370
Rated carrier frequency kHz		4	4	4	4	2	2	2	2	2
Efficiency η		>0.95	>0.95	>0.95	>0.95	>0.95	>0.95	>0.95	>0.95	>0.95
Power loss kW		1.3	1.67	1.93	2.48	2.3	3.02	3.9	4.4	5.5
Cooling air volume requirement m ³ /s		0.083	0.083	0.153	0.153	0.153	0.153	0.21	0.21	0.63
Noise level dB(A)		<75	<75	<75	<75	<75	<75	<75	<75	<75
24V DC output power supply (to control unit)		1	1	1	1	1	1	1	1	1
Length of cable for braking resistor, max m		15	15	15	15	15	15	15	15	15
Line supply connection	L1, L2, L3	SC cable lug, used for M10 bolts						SC wire ear, used for M12 bolts		
	conductor cross-section: mm ²	35...2x120	35...2x120	35...2x120	35...2x120	35...2x120	35...2x120	2x120	2x120	2x120
Motor connection	U, V, W	SC cable lug, used for M10 bolts						SC wire ear, used for M12 bolts		
	conductor cross-section: mm ²	35...2x120	35...2x120	35...2x120	35...2x120	35...2x120	35...2x120	2x120	2x120	2x120
DC bus connection (Connection for braking resistor)	DC+, DC-, R	Screw terminal						SC wire ear, used for M12 bolts		
	conductor cross-section: mm ²	25...70	25...70	25...70	25...70	25...70	25...70	2x120	2x120	2x120
PE connection		M10 screws on the housing						M8 screws on the housing		
Motor cable length, max.	Shielded (m)	50	50	50	50	50	50	300	300	300
	Unshielded (m)	100	100	100	100	100	100	100	100	100
Degree of protection		IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Dimensions	Width(W) mm	305	305	305	305	305	305	536	536	536
	Height(H) mm	750	750	750	750	750	750	885	885	885
	Depth(D) mm	357	357	357	357	357	357	370	370	370
Dimensions		B6	B6	B6	B6	B6	B6	B7	B7	B7
Weight (kg), approx.		65	65	65	65	65	65	150	150	150

2.5 Characteristic curve

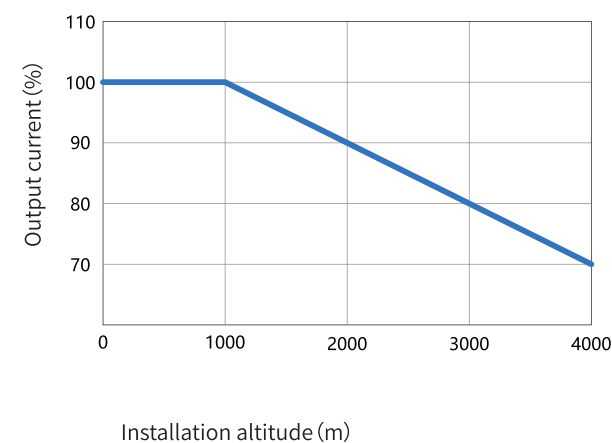
Capacity reduction data & Impulse frequency

Drivers power	Output current under different carriers (A)			
(kW)	2kHz	4kHz	6kHz	8kHz
0.75	2.2	2.2	1.9	1.5
1.5	4.1	4.1	3.5	2.9
2.2	5.9	5.9	5	4.1
3	7.7	7.7	6.5	5.4
4	10.2	10.2	8.7	7.1
5.5	13.2	13.2	11.2	9.2
7.5	18	18	15.3	12.6
11	26	26	22.1	18.2
15	32	32	27.2	22.4
18.5	38	38	32.3	26.6
22	45	45	38.3	31.5
30	60	60	51	42
37	75	75	63.8	52.5
45	110	90	76.5	63
55	130	110	93.5	77
75	178	145	123.3	101.5
90	200	178	151.3	124.6
110	205	178		
132	250	202		
160	302	250		
200	370	302		
250	477	370		

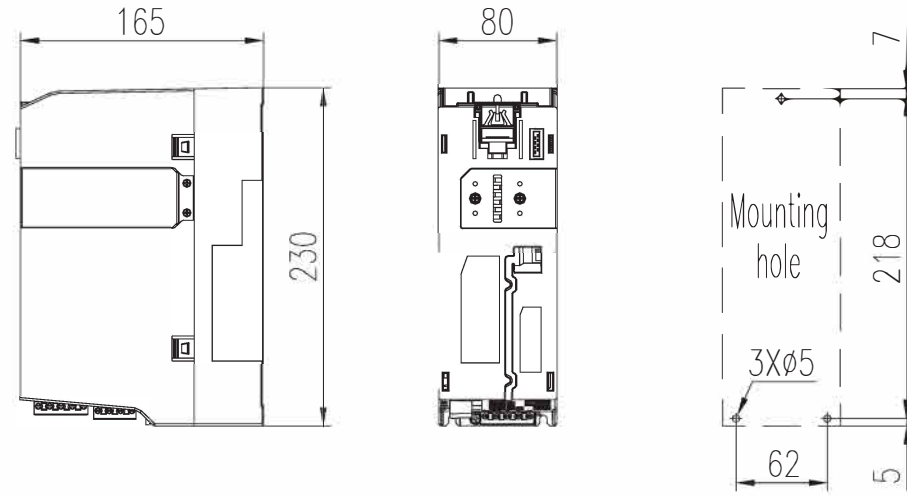
Capacity reduction data & Environment temperature



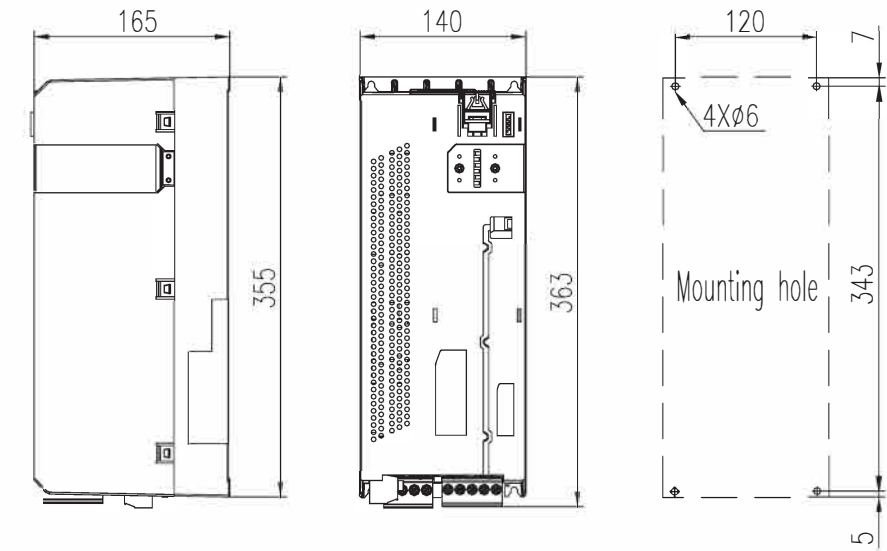
Capacity reduction data & Installation altitude



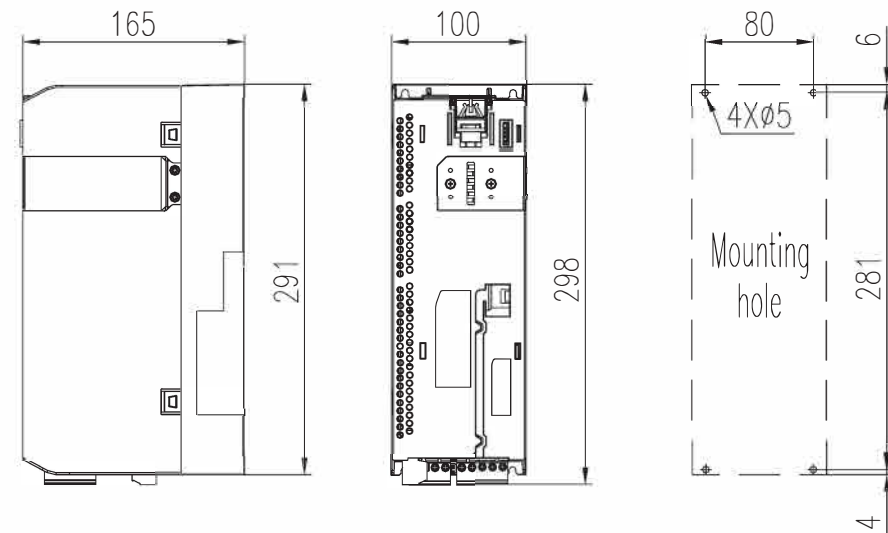
2.6 Dimensions



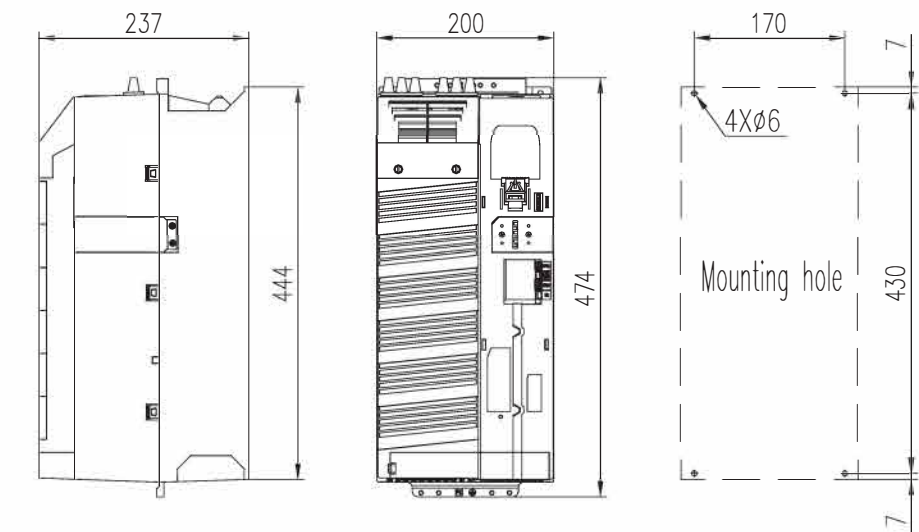
PM25 Power Module B1's dimensions
(Unit:mm)
Fixing requires 3 M4 combination screws, 3
M4 nuts, tightening torque: 2.5Nm
Ventilation space at the top and bottom:
100mm, no need on the side.
After installing the control module, the
installation depth increases accordingly.



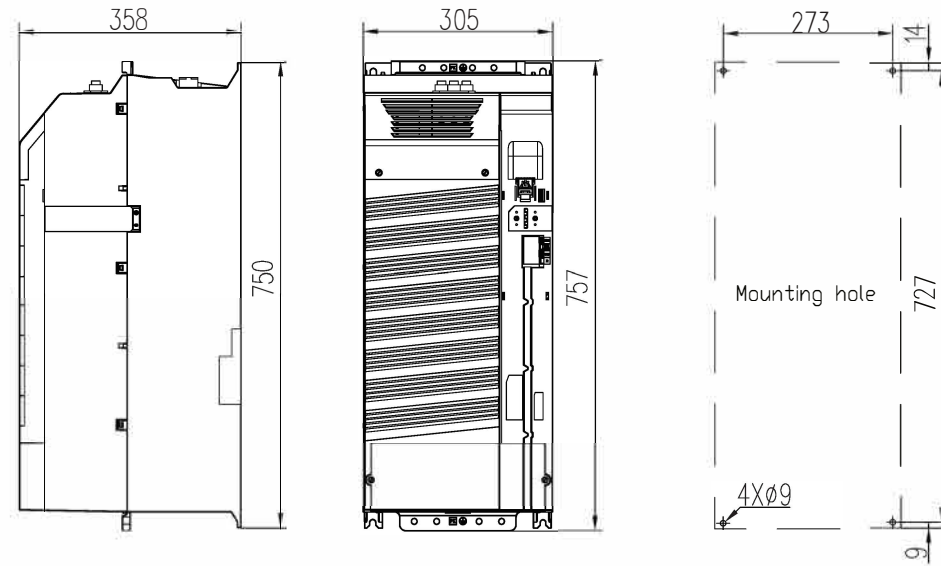
PM25 Power Module B3's dimensions
(Unit:mm)
Fixing requires 4 M5 combination screws, 4 M5
nuts, tightening torque: 4Nm
Ventilation space at the top and bottom:
100mm, no need on the side.
After installing the control module, the
installation depth increases accordingly.



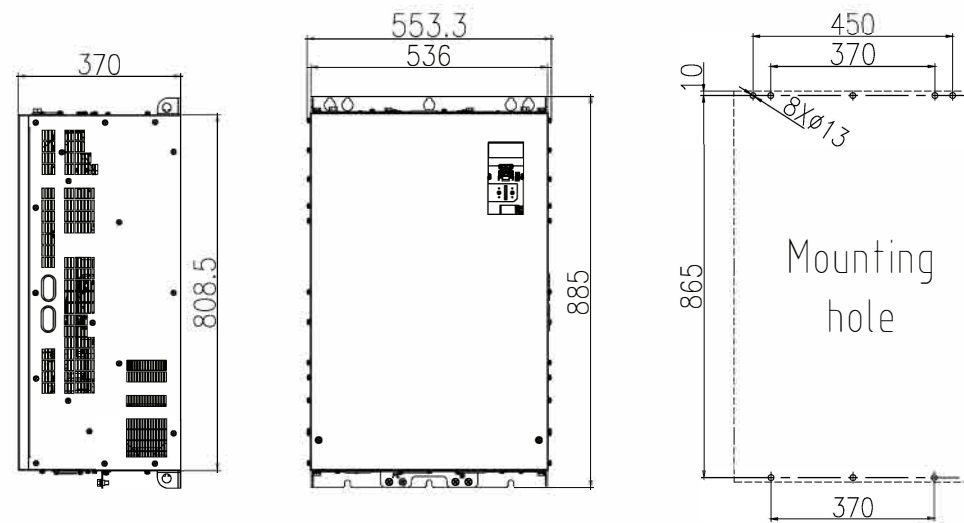
PM25 Power Module B2's dimensions
(Unit:mm)
Fixing requires 4 M4 combination screws, 4
M4 nuts, tightening torque: 2.5Nm
Ventilation space at the top and bottom:
100mm, no need on the side.
After installing the control module, the
installation depth increases accordingly.



PM25 Power Module B4's dimensions
(Unit:mm)
Fixing requires 4 M5 combination screws, 4 M5
nuts, tightening torque: 6Nm
Ventilation space at the top and bottom:
100mm, no need on the side.
After installing the control module, the
installation depth increases accordingly.



PM25 Power Module B6's dimensions
(Unit:mm)
Fixing requires 4 M8 combination screws, 4 M8 nuts, tightening torque: 25Nm
Ventilation space at the top and bottom: 100mm, no need on the side.
After installing the control module, the installation depth increases accordingly.



PM25 Power Module B7's dimensions
(Unit:mm)
Fixing requires 8 M12 combination screws, 8 M12 nuts, tightening torque: 80Nm
Ventilation space at the top and bottom: 200mm
Ventilation space on the both sides: 100mm

2.7 Options

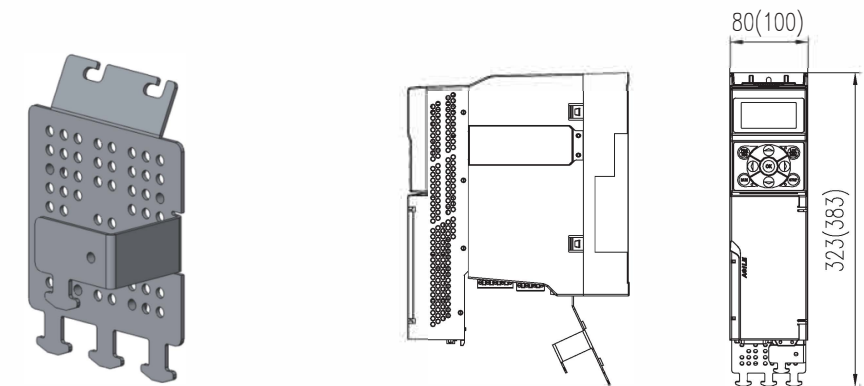
● Shield termination components
The shield termination components can not only eliminate mechanical stress, but also make it easier to connect the shielding layer of control cable and power supply, so as to ensure better EMC effect.

Ordering data for shield termination components

Dimensions	Model
B1	A1-H06-B1
B2	
B3	A1-H06-B3
B4	A1-H06-B4
B6	A1-H06-B6

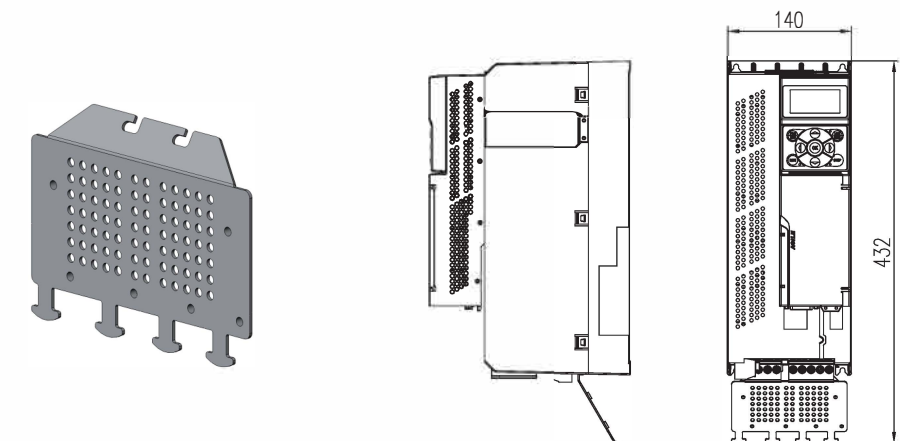
Shield termination components diagram and dimensions

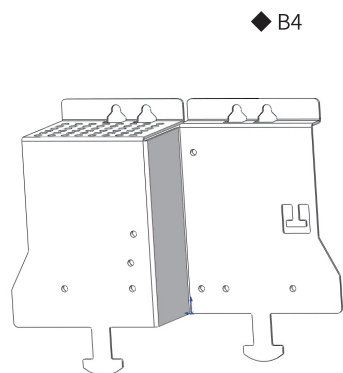
◆ B1(B2 dimensions in parentheses)



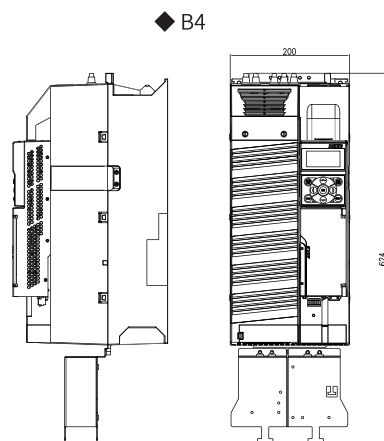
◆ B3

◆ B3

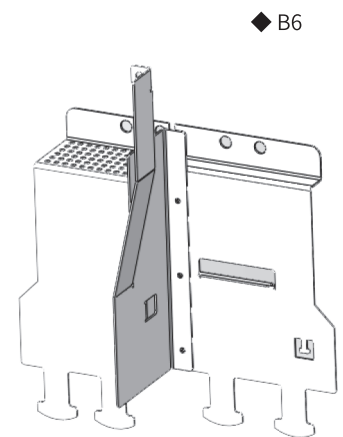




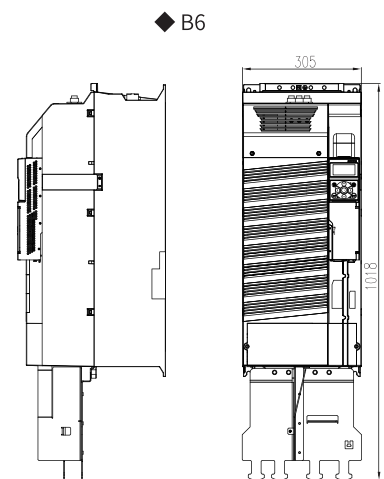
◆ B4



◆ B4



◆ B6



◆ B6

● Keyboard cabinet door installation components

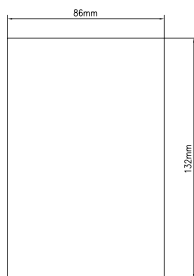
The keyboard cabinet door installation component can conveniently install the keyboard on the cabinet door, and can operate the driver without opening the cabinet door.
Ordering data of keyboard cabinet door installation components

Cable length (m)	IP level	Model
1.5	54	A1- H15-P- B15
2.0	54	A1- H15-P- B20
3.0	54	A1- H15-P- B30
5.0	54	A1- H15-P- B50

Outline drawing



Outline drawing of keyboard cabinet door installation components and opening dimensions of cabinet door



Dimensions of cabinet door opening

Optional accessories

● Line reactor

When the system failure rate is high, it is necessary to install a line reactor to protect the driver from excessive harmonic currents, improve the input side power factor of the driver, prevent overload, and limit the line harmonics to allowable values to ensure that the driver reaches the desired life. The recommended models of optional line reactors for 400V 50 / 60Hz A1 series drivers are as follows:

Driver		Recommended parameters of line reactor		Ordering data
Frame	Model without built-in filter	Rated current (A)	Inductance (mH)	
B1	A1-PM25-B3A75-N	2.6	5.9	A1-H12-TB280
	A1-PM25-B3B15-N	4.9	3.1	A1-H12-TB280
	A1-PM25-B3B22-N	7.1	2.2	A1-H12-TB200
	A1-PM25-B3B30-N	9.2	1.7	A1-H12-TB140
B2	A1-PM25-B3B40-N	12.2	1.3	A1-H12-TA930
	A1-PM25-B3B55-N	15.8	1	A1-H12-TA700
	A1-PM25-B3B75-N	21.6	0.8	A1-H12-TA700
B3	A1-PM25-B3C11-N	31.2	0.5	A1-H12-TA470
	A1-PM25-B3C15-N	38.4	0.4	A1-H12-TA350
B4	A1-PM25-B3C18-N	45.6	0.5	A1-H12-TA280
	A1-PM25-B3C22-N	54	0.4	A1-H12-TA240
	A1-PM25-B3C30-N	72	0.3	A1-H12-TA160
	A1-PM25-B3C37-N	90	0.2	A1-H12-TA160
B6	A1-PM25-B3C45-N	120	0.117	A1-H12-TB120
	A1-PM25-B3C55-N	150	0.094	A1-H12-TA095
	A1-PM25-B3C75-N	200	0.07	A1-H12-TA070
	A1-PM25-B3C90-N	250	0.056	A1-H12-TA056
	A1-PM25-B3D11-N	250	0.056	A1-H12-TA056
	A1-PM25-B3D13-N	290	0.048	A1-H12-TA048
B7	A1-PM25-B3D16-N	330	0.042	A1-H13-TA042
	A1-PM25-B3D20-N	390	0.036	A1-H13-TA036
	A1-PM25-B3D25-N	490	0.028	A1-H13-TA028

● Line filter

The function of the line filter is to suppress the electromagnetic interference transmitted from the driver to the public power grid through the input power line, and also to attenuate the interference from the power line into the driver; Please install as close to the input terminal side of the driver as possible, use the driver-specific line filter. The recommended models of optional line filters for 400V 50 / 60Hz A1 series drivers are as follows:

Driver		EMC filter	Ordering data
Frame	Model without built-in filter	Rated current	
		(A)	
B1	A1-PM25-B3A75-N	2.9	A1-H11-A-C10
	A1-PM25-B3B15-N	5.5	A1-H11-A-C10
	A1-PM25-B3B22-N	7.7	A1-H11-A-C10
	A1-PM25-B3B30-N	10.1	A1-H11-A-C10
B2	A1-PM25-B3B40-N	13.3	A1-H11-A-C20
	A1-PM25-B3B55-N	17.2	A1-H11-A-C20
	A1-PM25-B3B75-N	22.2	A1-H11-A-C30
B3	A1-PM25-B3C11-N	32.6	A1-H11-A-C36
	A1-PM25-B3C15-N	39.9	A1-H11-A-C50
B4	A1-PM25-B3C18-N	36	A1-H11-A-C50
	A1-PM25-B3C22-N	42	A1-H11-A-C50
	A1-PM25-B3C30-N	57	A1-H11-A-C65
	A1-PM25-B3C37-N	70	A1-H11-A-C80
B6	A1-PM25-B3C45-N	100	A1-H11-A-D10
	A1-PM25-B3C55-N	130	A1-H11-A-D13
	A1-PM25-B3C75-N	150	A1-H11-A-D15
	A1-PM25-B3C90-N	180	A1-H11-A-D18
	A1-PM25-B3D11-N	200	A1-H11-A-D20
	A1-PM25-B3D13-N	250	A1-H11-A-D25
B7	A1-PM25-B3D16-N	300	A1-H11-A-D30
	A1-PM25-B3D20-N	400	A1-H11-A-D40
	A1-PM25-B3D25-N	500	A1-H11-A-D50

● Output reactor

When the distance between the driver and the motor exceeds 50 meters, the leakage current is too large due to the parasitic capacitance effect of the long cable to the ground, and the driver is prone to frequent overcurrent protection. At the same time, to avoid damage to the motor insulation, output reactor compensation is required. The output reactor can reduce the voltage load on the motor windings, and when a long motor cable is used, the capacitive charge and discharge current is added to the additional load of the power section. The recommended models of optional output reactors for 400V 50 / 60Hz A1 series drivers are as follows:

Driver		Output reactor		Ordering data
Frame	Model without built-in filter	Rated current	Inductance	
		(A)	(mH)	
B1	A1-PM25-B3A75-N	2.6	3.2	A1-H13-TB140
	A1-PM25-B3B15-N	4.9	1.7	A1-H13-TB140
	A1-PM25-B3B22-N	7.1	1.2	A1-H13-TB100
	A1-PM25-B3B30-N	9.2	0.9	A1-H13-TA700
B2	A1-PM25-B3B40-N	12.2	0.7	A1-H13-TA470
	A1-PM25-B3B55-N	15.8	0.5	A1-H13-TA350
	A1-PM25-B3B75-N	21.6	0.4	A1-H13-TA230
B3	A1-PM25-B3C11-N	31.2	0.3	A1-H13-TA180
	A1-PM25-B3C15-N	38.4	0.2	A1-H13-TA180
B4	A1-PM25-B3C18-N	45.6	0.2	A1-H13-TA140
	A1-PM25-B3C22-N	54	0.2	A1-H13-TA120
	A1-PM25-B3C30-N	72	0.1	A1-H13-TA087
	A1-PM25-B3C37-N	90	0.1	A1-H13-TA078
B6	A1-PM25-B3C45-N	120	0.058	A1-H13-TA058
	A1-PM25-B3C55-N	150	0.047	A1-H13-TA047
	A1-PM25-B3C75-N	200	0.035	A1-H13-TA035
	A1-PM25-B3C90-N	250	0.028	A1-H13-TA028
	A1-PM25-B3D11-N	250	0.028	A1-H13-TA028
	A1-PM25-B3D13-N	290	0.024	A1-H13-TA024
	A1-PM25-B3D16-N	330	0.021	A1-H13-TA021
B7	A1-PM25-B3D20-N	390	0.018	A1-H13-TA018
	A1-PM25-B3D25-N	490	0.014	A1-H13-TA014

● Braking resistance

The braking resistor is used to quickly brake a load with large moment of inertia. When the motor and load are braked, the regenerative energy converted from kinetic energy will be returned to the driver, and the DC bus voltage will be raised. The driver will consume almost all of this regenerated energy on the braking resistor; The recommended models of optional braking resistor 400V 50 / 60Hz A1 series drivers are as follows:

Driver		Allowable minimum braking resistance	10% ED (100s cycle) infrequent braking applications			
			Recommended value		REXON Model	
Frame	Model without built-in filter		Power (kW)	Resistance (Ω)	Ordering data	Equivalent braking resistance
B1	A1-PM25-B3A75-N	374Ω	0.1	750	A1-H02-A10-K-D75	100W 750Ω
	A1-PM25-B3B15-N	374Ω	0.2	390	A1-H02-A20-K-D39	200W 390Ω
	A1-PM25-B3B22-N	140Ω	0.3	240	A1-H02-A40-K-D24	400W 240Ω
	A1-PM25-B3B30-N	140Ω	0.5	180	A1-H02-A50-K-D18	500W 180Ω
B2	A1-PM25-B3B40-N	75Ω	0.6	130	A1-H02-A80-K-D13	800W 130Ω
	A1-PM25-B3B55-N	75Ω	0.8	100	A1-H02-A80-K-D10	800W 100Ω
	A1-PM25-B3B75-N	75Ω	1.1	75	A1-H02-B12-K-C75	1200W 75Ω
B3	A1-PM25-B3C11-N	30Ω	1.6	51	A1-H02-B20-K-C51	2000W 51Ω
	A1-PM25-B3C15-N	30Ω	2.2	36	A1-H02-B25-K-C36	2500W 36Ω
B4	A1-PM25-B3C18-N	27Ω	2.7	30	A1-H02-B30-K-C30	3000W 30Ω
	A1-PM25-B3C22-N	27Ω	2.9	28	A1-H02-B30-K-C28	3000W 28Ω
	A1-PM25-B3C30-N	15Ω	4.4	18.2	A1-H02-B50-K-C18	5000W 18.2Ω
	A1-PM25-B3C37-N	15Ω	5.4	15	A1-H02-B60-K-C15	6000W 15Ω
B6	A1-PM25-B3C45-N	10Ω	6.7	12	A1-H02-B80-K-C12	8000W 12Ω
	A1-PM25-B3C55-N	10Ω	8	10	A1-H02-B80-K-C10	8000W 10Ω
	A1-PM25-B3C75-N	7.1Ω	11	7.3	A1-H02-C12-K-B73	12000W 7.3Ω
	A1-PM25-B3C90-N	7.1Ω	11	7.3	A1-H02-C12-K-B73	12000W 7.3Ω
	A1-PM25-B3D11-N	5Ω	16	5	A1-H02-C20-K-B50	20000W 5Ω
	A1-PM25-B3D13-N	5Ω	16	5	A1-H02-C20-K-B50	20000W 5Ω

Note:
For Power Module B7, you require an external brake unit and 20% of the inverter power, the braking resistor according to the external brake unit.

Driver		15% ED frequent braking applica- tions				25% ED frequent braking applica- tions			
		(Example: driving pan application)				(Example: driving pan application)			
Frame	Model without built-in filter	Recommended value		REXON Model		Recommended value		REXON Model	
		Power (kW)	Resis- tance (Ω)	Ordering number	Equivalent braking resistance	Power (kW)	Resis- tance (Ω)	Ordering number	Equivalent braking resistance
B1	A1-PM25-B3A75-N	0.2	750	A1-H02-A20-K-D75	200W 750Ω	0.37	750	A1-H02-A40-K-D75	400W 750Ω
	A1-PM25-B3B15-N	0.4	390	A1-H02-A40-K-D39	400W 390Ω	0.75	390	A1-H02-A80-K-D39	800W 390Ω
	A1-PM25-B3B22-N	0.6	240	A1-H02-A80-K-D24	800W 240Ω	1.1	240	A1-H02-B12-K-D24	1200W 240Ω
	A1-PM25-B3B30-N	0.9	180	A1-H02-B10-K-D18	1000W 180Ω	1.5	180	A1-H02-B15-K-D18	1500W 180Ω
B2	A1-PM25-B3B40-N	1.2	130	A1-H02-B12-K-D13	1200W 130Ω	2	130	A1-H02-B20-K-D13	2000W 130Ω
	A1-PM25-B3B55-N	1.6	100	A1-H02-B20-K-D10	2000W 100Ω	2.7	102	A1-H02-B30-K-D10	3000W 102Ω
	A1-PM25-B3B75-N	2.2	75	A1-H02-B25-K-C75	2500W 75Ω	3.7	78	A1-H02-B40-K-C78	4000W 78Ω
B3	A1-PM25-B3C11-N	3.3	48	A1-H02-B40-K-C48	4000W 48Ω	5.5	51	A1-H02-B60-K-C51	6000W 51Ω
	A1-PM25-B3C15-N	4.5	36	A1-H02-B50-K-C36	5000W 36Ω	7.5	36	A1-H02-B80-K-C36	8000W 36Ω
B4	A1-PM25-B3C18-N	5.5	30	A1-H02-B60-K-C30	6000W 30Ω	9	30	A1-H02-C10-K-C30	10000W 30Ω
	A1-PM25-B3C22-N	6.6	27	A1-H02-B80-K-C22	8000W 27Ω	11	28.7	A1-H02-C12-K-C28	12000W 28.7Ω
	A1-PM25-B3C30-N	9	18	A1-H02-C10-K-C18	10000W 18Ω	15	18	A1-H02-C15-K-C18	15000W 18Ω
	A1-PM25-B3C37-N	11	16	A1-H02-C12-K-C16	12000W 16Ω	18	16.5	A1-H02-C20-K-C16	20000W 16.5Ω
B6	A1-PM25-B3C45-N	13	12	A1-H02-C15-K-C12	15000W 12Ω	22	13.2	A1-H02-C25-K-C13	25000W 13.2Ω
	A1-PM25-B3C55-N	16	10	A1-H02-C16-K-C10	16000W 10Ω	27	11	A1-H02-C30-K-C11	30000W 11Ω
	A1-PM25-B3C75-N	22	8	A1-H02-C25-K-B80	25000W 8Ω	37	8.3	A1-H02-C40-K-B83	40000W 8.3Ω
	A1-PM25-B3C90-N	27	7.3	A1-H02-C30-K-B73	30000W 7.3Ω	45	7.3	A1-H02-C45-K-B73	45000W 7.3Ω
	A1-PM25-B3D11-N	33	5.1	A1-H02-C35-K-B51	35000W 5.1Ω	55	5.1	A1-H02-C55-K-B60	55000W 6Ω
	A1-PM25-B3D13-N	39	5	A1-H02-C40-K-B50	40000W 5Ω	66	5	A1-H02-C70-K-B50	70000W 5Ω

3 CM25 Control Module

3.1 Summary

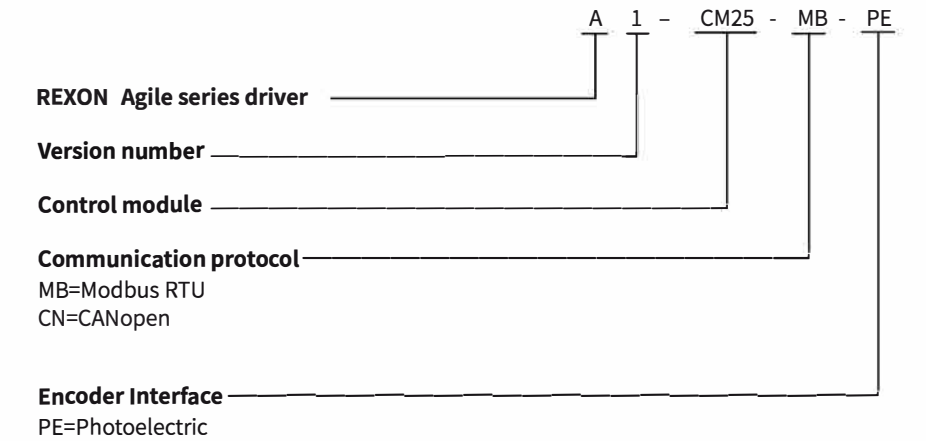


CM25 Control Module

CM25 control module provides closed-loop control function for the driver. It can be used to implement all common applications involving V/F or sector control .
These points must be noted:
◆Vector control (FVC) and Sensorless vector control(SVC) can both be achieved
◆Continuous development of process functions. (Has introduced "Anti-swing","Speed with load" function, etc.)

3.2 Selective ordering data

Model indication method



Ordering Data

Interface type description	
Support Modbus communication protocol, Incremental/absolute photoelectric encoder	A1-CM25-MB-PE
Support CANOPEN communication protocol, Incremental/absolute photoelectric encoder	A1-CM25-CN-PE

3.3 Design



CM25 Control Module's terminal cover (open and closed)

3.4 Electrical connection

CM25

Power and Ground:

- 24V IN, 24VDC/2A
- GND

Digital Inputs (DI):

- DI0, DI1, DI2, DI3, DI4, DI5, DI6, DI7+, DI7-, DI8+, DI8-, DI9+, DI9-

Analog Inputs (AI):

- AI0+, AI0-, AI1+, AI1-, GND

Motors:

- MOTORT1, MOTORT2

Digital Outputs (DO):

- DO0 COM, DO0 NC, DO0 NO, DO1 COM, DO1 NC, DO1 NO, DO2, DO3, DO COM

Communication and Control:

- keypad (to OP25)
- USB (to PC)
- AO0, AO1, GND (0V~+10V, 0mA~20mA)
- Modbus or CANopen (PE, RS485B/CANL, RS485A/CANH, GND, *)
- encoder (to incremental encoder)

Notes:

- >5kΩ
- KTY84-130
- 125VAC/0.3A or 30VDC/1A
- 40V/90mA

DB 15 encoder interface

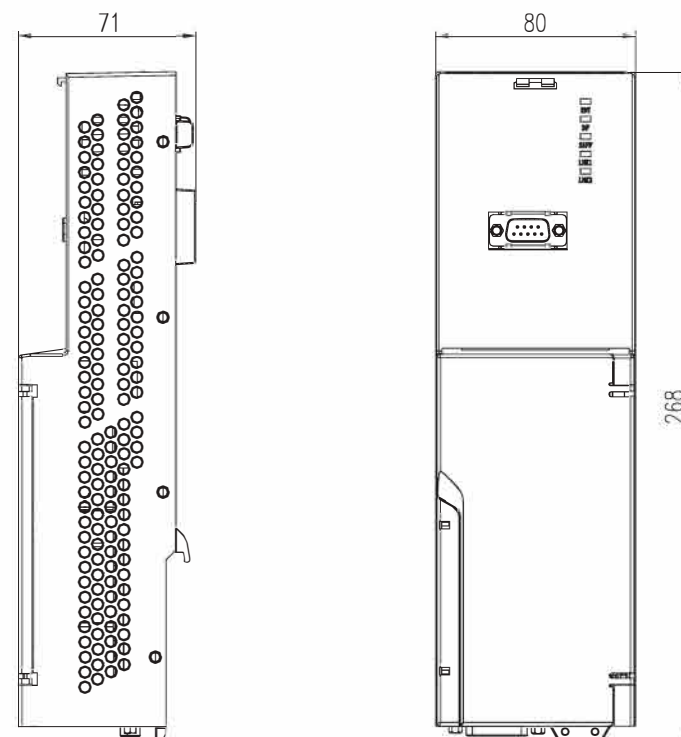
Pin number	Signal name	Description
1	-	-
2	-	-
3	-	-
4	DB15_PWR	5V/24V
5	DB15_PWR	5V/24V
6	-	-
7	DB15_0V	0V
8	DB15_0V	0V
9	-	-
10	DB15_Z+	Z+
11	DB15_Z-	Z-
12	DB15_B-	B-
13	DB15_B+	B+
14	DB15_A-	A-
15	DB15_A+	A+

3.5 Technical parameters

Electrical parameter		
Operating voltage		Connecting 24V DC through the power unit or 20~30VDC supplied from external power.
The maximum current consumption		≤1.0A
Protection isolation		PELV in accordance with the standard EN50178
		The protection is separated from the incoming power supply, with double enhanced isolations.
Power loss		≤10W
interfaces		
Common digital inputs		7 common COM inputst
		•DI0~DI6
		•Electrical isolation
		•Support for two-way input
		1 common differential input
		•DI7
		•Electrical isolation
		•Support for two-way input
		2 high-speed differential inputs
		•DI8~DI9
		•Electrical isolation
		•Support for two-way input
		3 inputs at most
		•Reuse 6-way common DI terminals,DI0~DI5
Analog inputs		2 channels(AI0 and AI1)
		•Differential input
		•Options :0~10V,-10~+10V and 0~20mA
		•The input impedance is 500 ohm at 0~20mA.
Digital outputs		2 relay outputs
		•DO0~DO1
		•The maximum output is 30Vdc and 0.5A
		2 transistor outputs
		•DO2~DO3
		•The maximum output is 0.05A
		•Open collector mode(Common COM)
Analog outputs		2 outputs (AO0~AO1)
		•Options:0~10V, 0~20mA
		•The reference potential is GND
PTC/KTY interface		1 motor temperature detection interface
		•Available sensor types: PTC, KTY84
		•Humidity accuracy ±5°C
Integrated bus interface		
Modbus RTU		RS485 interface, with isolator and bus terminator, 115.2kbps maximum baud rate
CANopen		CAN interface, with isolator and bus terminator, 1Mbps maximum baud rate

3.6 Dimensions

Optional interface		
Operator Panel	Chinese and English LCD display operation panel, support for direct installation and cabinet door installation.	
PC interface	USB interface(Connecting to PC via USB cable) (developing)	
Open loop and closed loop control functions		
Linear/parabolic/programmable V/F control	√	
Speed vector control with no sensors	√	
Speed vector control with sensors	√	
The macro application	√	
Parameter calibration for input of set value	√	
The fixed frequency	16, programmable	
JOG	√	
Electric potentiometer	√	
Slope smoothing	√	
Ramp function generator	√	
Slip compensation	√	
Interconnection parameter technology	√	
Oscilloscope function (TRACE)	√	
Switchable set of driver parameters		4
Switchable set of command parameters		4
Free functional block function	√	
The process controller with built-in PID	√	
Speed tracking	√	
The power supply stops immediately and restarts automatically	√	
Motor temperature protection	√	
Driver temperature protection	√	
Motor identification	√	
Motor lock control	√	
Automatic maximum voltage control (Vdcmax control)	√	
Kinetic buffering function (Vdcmin control)	√	
Braking functions	DC braking, compound braking, external braking resistor	
Mechanical and environmental requirements		
Degree of protection	IP20	
Signal cable cross-section	0.05 mm2 (AWG30)	
	1.5 mm2 (AWG16)	
Operating temperature	-20°C~+50°C	
Storage temperature	-40°C~+70°C	
Relative humidity	<95% RH, no condensation	
Dimensions	Width(W)mm	80
	Height(H)mm	268
	Depth(D)mm	71
Weight, approx	0.7 kg	



CM25 Control Module's dimensions (Unit:mm)

4 CM22 Control Module

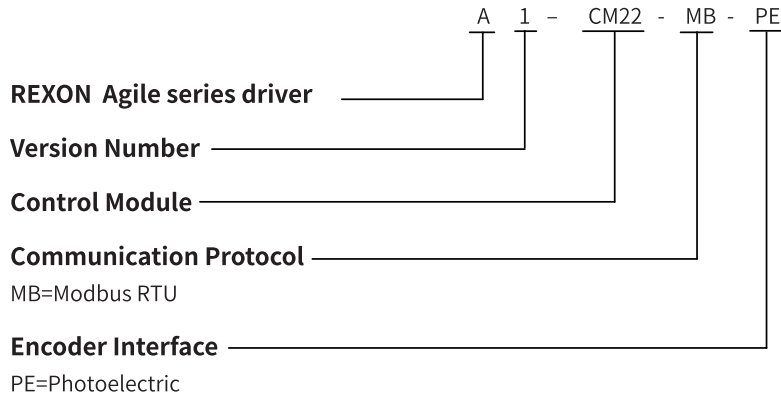
4.1 Summary



CM22 Control Module

CM22 Control Module provides closed-loop control functions for the driver. It can be used to implement all common applications involving V/F or sector control (Inductive vector control FVC and no-inductive vector control SVC), support for MODBUS communication protocol, Incremental photoelectric encoder.

4.2 Selective ordering data Model indication method



Ordering data

The ordering data of Control Module CM25 is A1-CM22-MB-PE

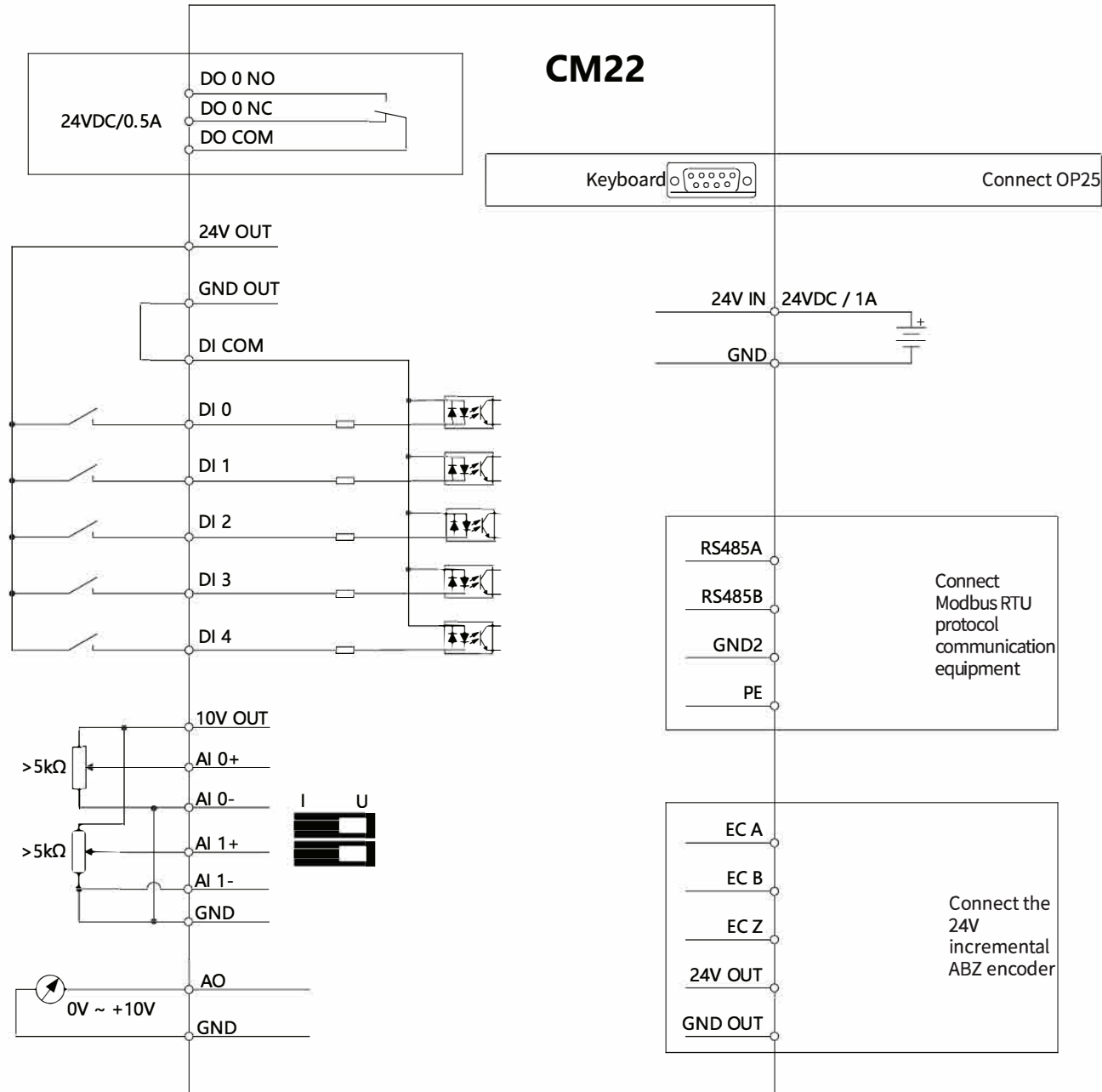
4.3 Design



CM22 Control Module's terminal cover (open and closed)

Functions	Technical data
Communication function	A1-CM22-MB-PE
External power supply	Supply 18~30Vdc through terminal+24V IN and GND IN, the maximum operating current is 1A
Output power supply	Digital input terminal power supply
	Analog input terminal power supply
	Encoder power supply
Digital inputs	5 common COM inputs
Analog inputs	2 channels(AI0 and AI1)
Digital output	1 relay output
Analog output	1 channel(AO0)
Encoder	HTL, TTL
Indicator lights	2 dichromatic indications
Electromagnetic compatibility	1 monochromatic indication
Operating temperature	-20°C~+50°C
Storage temperature	-40°C~+70°C
Air humidity	<95% , no condensation

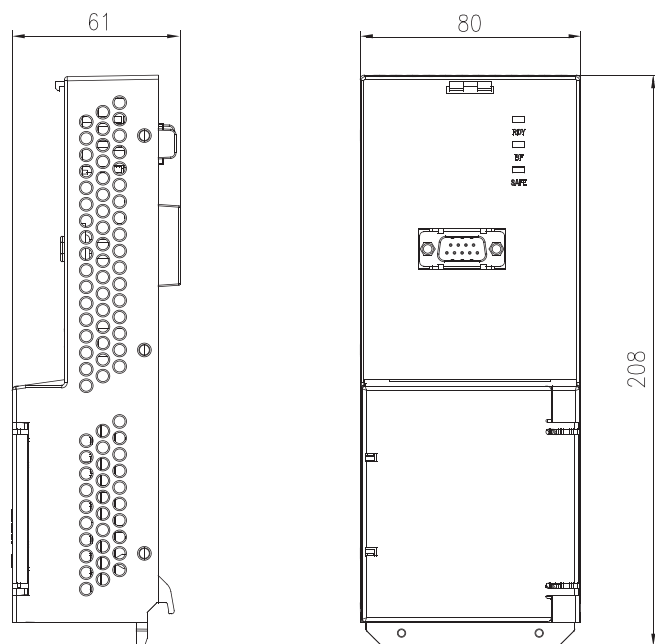
4.4 Electrical connection



4.5 Technical parameters

Electrical parameters		
Operating voltage	Connecting 24V DC through the power unit or 20~30VDC supplied from external power.	
The maximum current consumption	≤1.0A	
Protection isolation	PELV in accordance with the standard EN50178	
	The protection is separated from the incoming power supply, with double enhanced isolations.	
Power loss	≤10W	
Interfaces		
Common digital inputs	5 common COM inputs	
	•DI0~DI4	
	•Electrical isolation	
	•Support for two-way input	
Analog inputs	2 channel (AI0, AI1)	
	•Differential input	
	•Options:0~10V, -10~10V and 0~20mA	
	•Input impedance 500 ohms at 0~20mA.	
Digital output	1 relay output	
	•DO0	
	•Maximum output 30Vdc and 0.5A	
Analog output	1 output(AO0)	
	•0~10V	
	•Reference potential GND	
Integrated bus interface		
Modbus RTU	RS485 communication interface, with isolation and bus terminal resistance switch. Max Baud:115.2k bps	
Optional interfaces		
Operator Panel	Chinese and English LCD display operation panel, support for direct installation and cabinet door installation.	
Open loop and closed loop control function		
Linear/parabolic/programmable V/F control	√	
Speed vector control with no sensors	√	
Speed vector control with sensors	√	
The macro application	√	
Parameter calibration for input of set value	√	
The fixed frequency	16, programmable	
JOG	√	
Electric potentiometer(MOP)	√	
Slope smoothing	√	
Ramp function generator	√	
Slip compensation	√	
Interconnection parameter BICO technology	√	
Oscilloscope function(TRACE)	√	
Switchable set of driver parameters	4	
Free function block function, logic and operation	√	
The processcontrollerwith built-in PID	√	
Speed tracking	√	
The power supply stops immediately and restarts automatically	√	
Driver temperature protection	√	
Motor identification	√	
Motor lock control	√	
Automatic maximum voltage control(Vdcmax control)	√	
Kinetic buffering function(Vdcmin control)	√	
Braking functions	DC braking, compoundbraking, external braking resistor	
Mechanical and environment requirements		
Degree of protection	IP20	
Signal cable cross-section	•Minimum	0.05 mm2 (AWG30)
	•Maximum	1.5 mm2 (AWG16)
Operating temperature	-20℃~+50℃	
Storage temperature	-40℃~+70℃	
Relative humidity	<95% RH, no condensation	
Dimensions	Width(W)mm	80
	Height(H)mm	208
	Depth(D)mm	61
Weight, approx	0.6kg	

4.6 Dimensions



CM22 Control Module's dimensions (Unit:mm)

5 CM23 Control Module

5.1 Summary

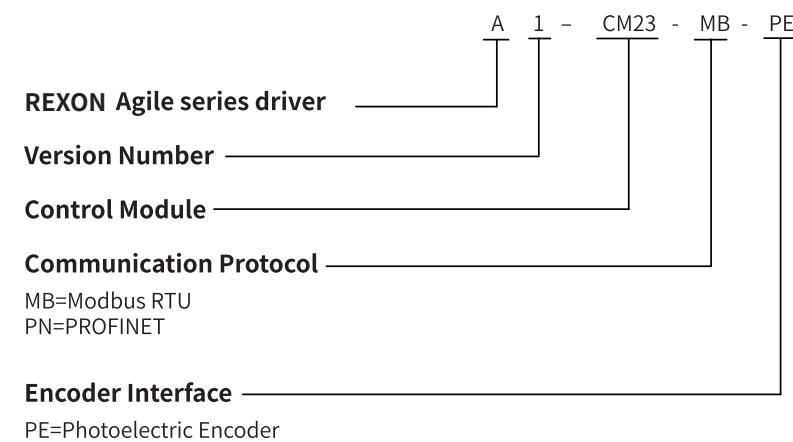


CM23 Control Module

CM23 Control Module provides closed-loop control functions for the diver. It can be used to implement all common applications involving V/f or sector control (Inductive vector control FVC and no-inductive vector control SVC), support for Modbus RTU and PROFINET communication protocol, Incremental photoelectric encoder.

5.2 Selective ordering data

Model indication method



Interface types	Ordering data
Modbus RTU communication protocol;Incremental encoder	A1-CM23-MB-PE
PROFINET communication protocol;Incremental encoder	A1-CM23-PN-PE

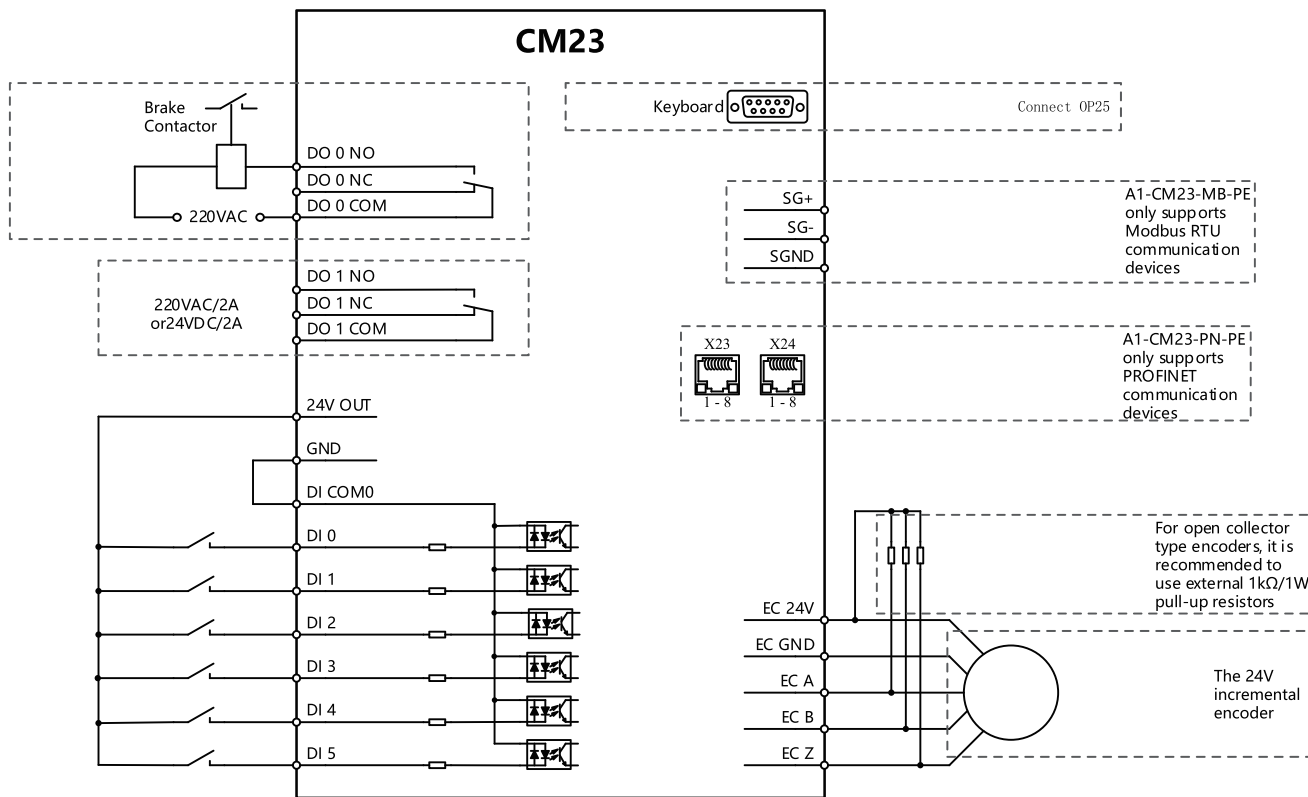
5.3 Design



CM23 Control Module's terminal cover (open and closed)

Function	Technical data	
Bus interface	A1-CM23-MB-PE	• Support Modbus RTU communication • Baud rate: 115200bps at most
	A1-CM23-PN-PE	• Support PROFINET communication • BRJ45 interface
Working power supply	Power supply of power module	• 24V/0.6A
Output power supply	+24 V output	• Voltage range: DC 18V...26.8V • Maximum current: 200mA
	Encoder power supply	• Voltage range: DC 18V...26.8V • Maximum current: 200mA
Digital inputs	6 (DI0 ~ DI5)	• Common terminal DICO0 • Electrical isolation • Support source and sink mode • Voltage: DC 24 V, AC 36 V, AC 48 V • "1" signal voltage: > 11 V • "0" signal voltage: < 5V • 24 V typical current: 4 mA • Response time: 6ms (including software filtering)
Digital outputs	2 relays (DO0 ~ DO1)	• Voltage: DC 24 V, AC 220 V • Continuous current: 2A • Switching current: 2A • Contact type: 1 normally open and 1 normally closed
Encoder signal input	Incremental ABZ encoder	• Support single ended signal of 24 V • Input frequency: maximum 200kHz • Cable length: 24 V open collector type 50 m; 24 V push pull type 100 m • RDY indicator: red and green • BF indicator: red and green
Indicator lights	2 dichromatic indications	• BF indicator: red and green
	1 monochromatic indication	• SAFE indicator: yellow
Keyboard interface	Support OP25	• Direct installation or external installation
Working temperature	-20°C~+50°C	
Storage temperature	-40°C~+70°C	
Relative air humidity	<95%	No condensation
Pollution	Comply with IEC 61800-5-1	Suitable for pollution level 2 environment
Electromagnetic compatibility	Comply with IEC 61800-3	

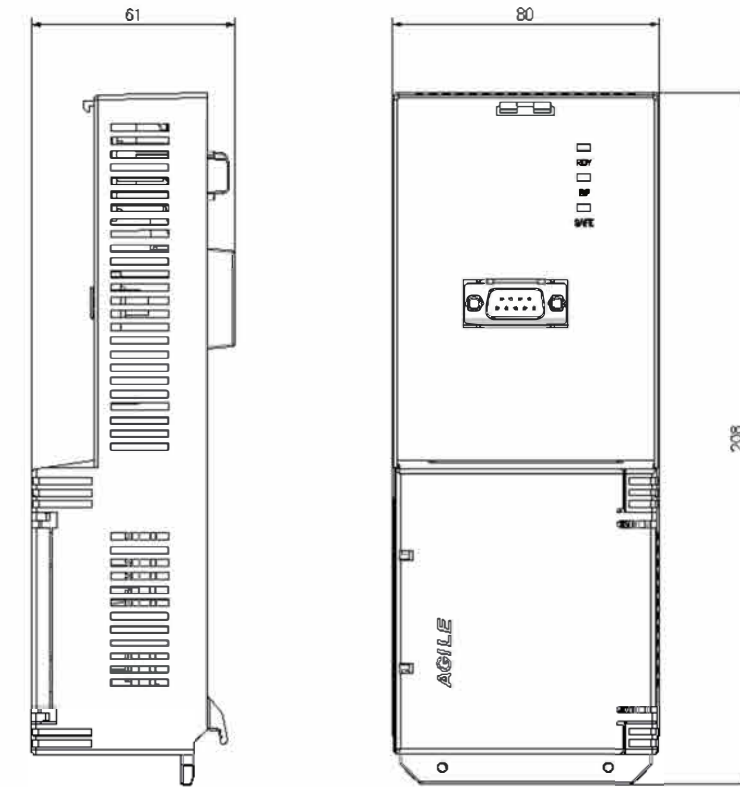
5.4 Electrical connection



5.5 Technical parameters

Electrical parameters		
Operating voltage	24VDC through power module	
Maximum current consumption	≤1A	
Protective isolation	PELV in accordance with the standard EN50178	
	Protection separated from incoming power, adopts dual-enhanced isolation.	
Interfaces		
Common digital inputs	6 common COM inputs	DI 0 ~ DI5
		Electrical isolation
		Support two-way input
Analog input	Not supported	
Digital outputs	2 relay outputs	DO0, DO 1
		Support 250VAC, 30VDC
		Maximum current 2A
Analog output	Not supported	
Integrated bus interface		
Modbus RTU	RS485 communication interface, with isolation, maximum baud rate: 115.2kbps	
Profinet	RJ45	
Optional interfaces		
Operation Panel	OP25 can be selected to support direct installation and external installation	
Open loop and closed loop control function		
Linear/parabolic/programmable V/F control	√	
Speed vector control with no sensors	√	
Speed vector control with sensors	√	
Macro application	√	
Parameter calibration for input of set value	√	
Fixed frequency	16, programmable	
JOG	√	
Electric potentiometer(MOP)	√	
Slope smoothing	√	
Ramp function generator	√	
Slip compensation	√	
Interconnection parameter BICO technology	√	
Oscilloscope function(TRACE)	√	
Switchable set of driver parameters	4	
Free function block function, logic and operation	√	
Speed tracking	√	
The power supply stops immediately and restarts automatically	√	
Driver temperature protection	√	
Motor identification	√	

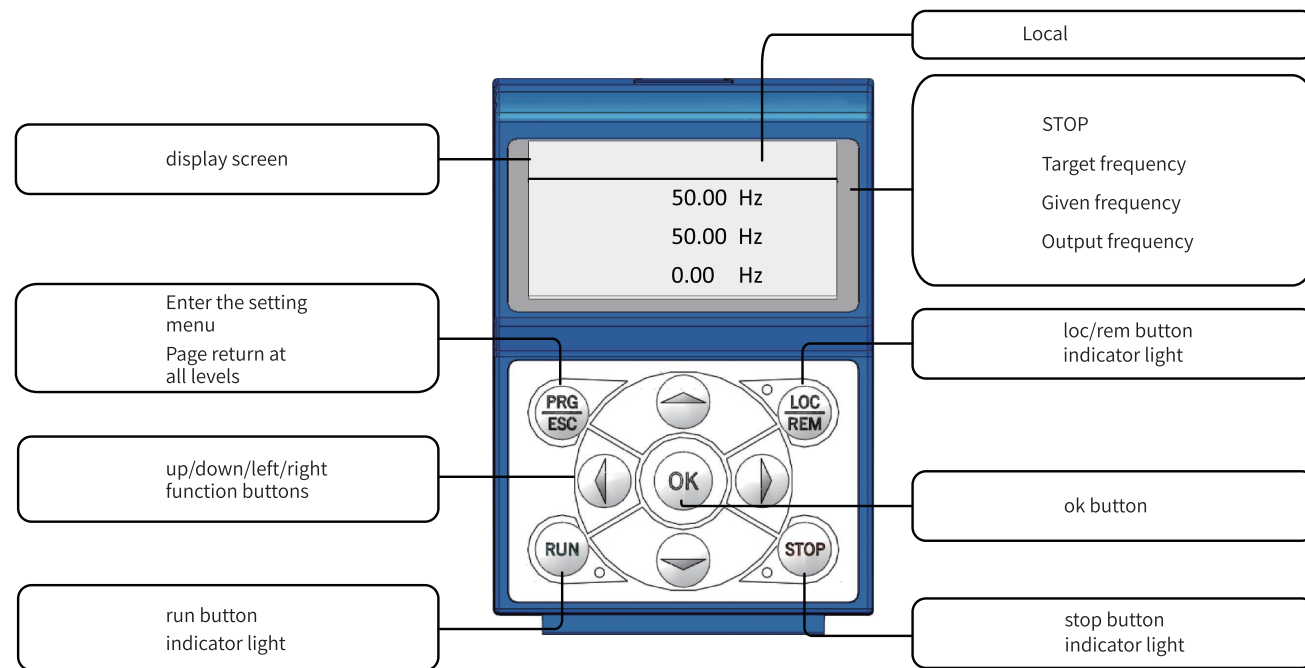
5.6 Dimensions



CM23 Control Module's dimensions (Unit:mm)

6 OP25 Operation Panel

6.1 Summary



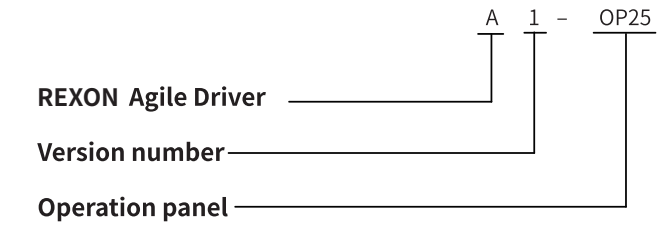
OP25 Operation Panel

Through the menu navigation and 128*64 dot LED display screen, 3 rows of parameters and 1 row status can be displayed, making the debugging of the driver very simple. The operation panel can not only display the parameter name and parameter value at the same time, but also has the parameter filtering function, and most operations do not need paper manual or parameter manual. The driver's parameters can be set locally through these 8 buttons: top, bottom, left, right, RUN, STOP, OK and PRG/ESC. At the same time, there is a specific button on the panel to complete the panel/remote direct switch.

The driver's faulty diagnosis can be accomplished through menu's guide, and the current latest fault will be displayed on the main page until eliminating the fault or clearing manually, which improves the convenience and security of the operation. The current parameters of driver can be copied to the operation panel and downloaded to the same type of drive if necessary. The backlight delay time and screen display contrast of the operation panel can be set. The working temperature of OP25 is 0°C ~+50°C.

6.2 Selective ordering data

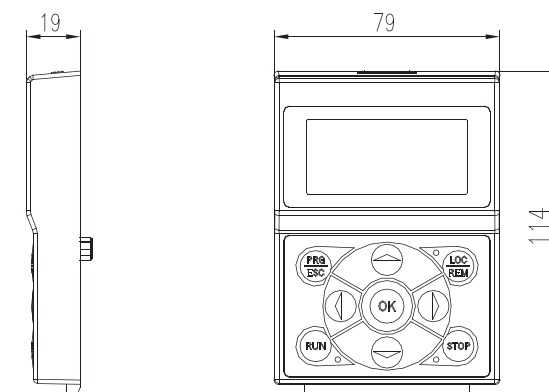
Model representation



Ordering data

Ordering data of operation panel OP25 A1-OP25

6.3 Dimensions



OP25 Operation Panel's dimensions (Unit:mm)

REXON Product Integration Diagram

CONTROL

DRIVE

MOTOR

GEAR

