## ESM-9000 series
Built-in bypass Soft Starter

⊙ More control

➤ ESM-9000 soft starter adopts a new generation of soft start technology, and the adaptive acceleration control enables you to control the motor acceleration curve and deceleration curve to an unprecedented level.

➤ The soft starter reads the motor's performance during starting and stopping and adjusts its control to achieve the best results. Simply select the curve that best fits your load type, and the soft starter automatically ensures that the load is accelerated as smoothly as possible.

⊙ Product feature

➤ ESM-9000 is a highly intelligent, very reliable and easy to use soft starter. ESM-9000 is a perfect solution with newly designed functions for quick setup or more personalized control. Its performance includes.

➤ A large LCD screen that displays feedback in multiple languages.

➤ A remote-mounted operating board.

➤ Intuitive programming.

➤ Advanced start and stop control functions.

➤ A series of motor protection functions.

➤ Extensive performance monitoring and event logging.

⊙ Adaptive acceleration control

Adaptive acceleration curve selection

speed
Early acceleration
Constant acceleration
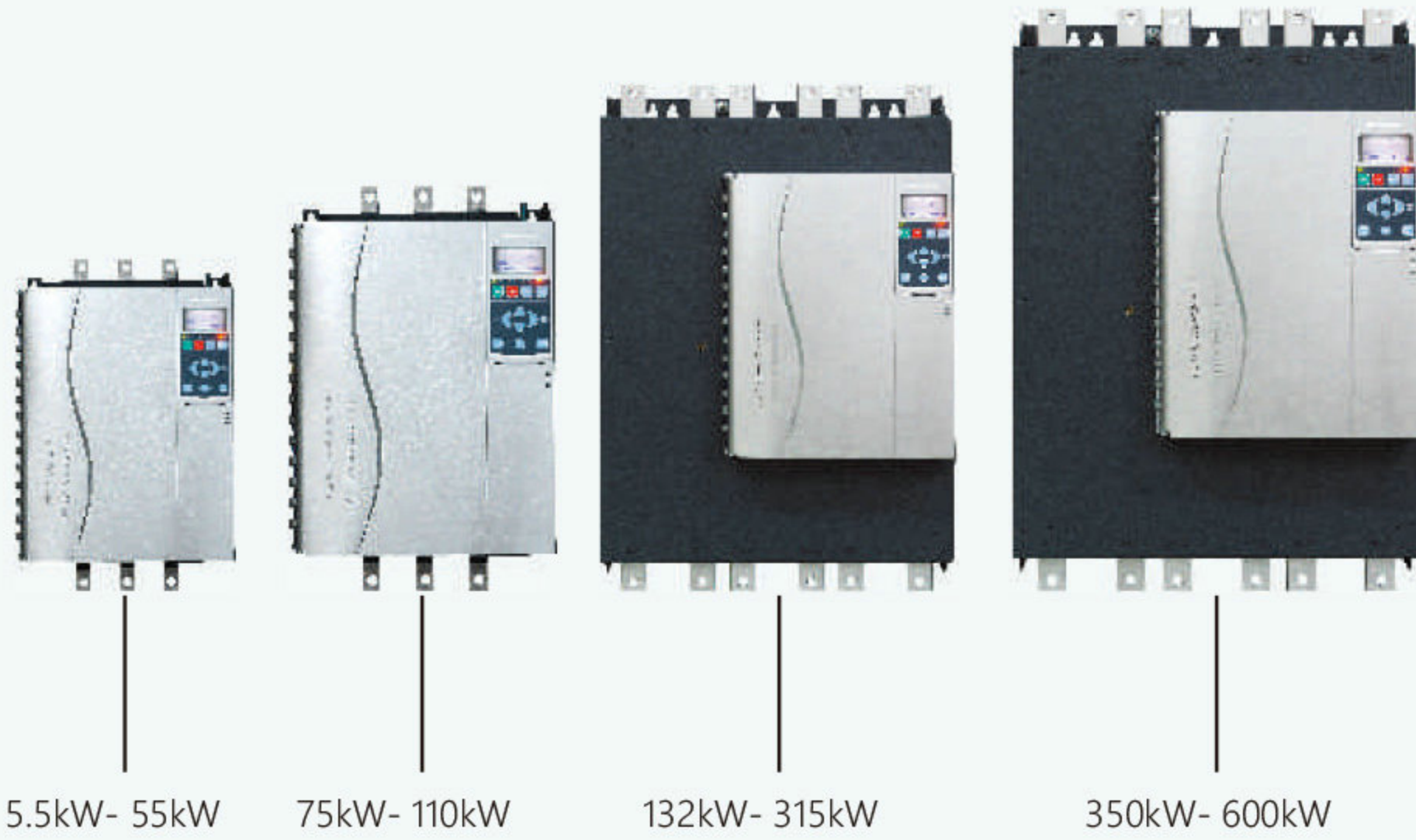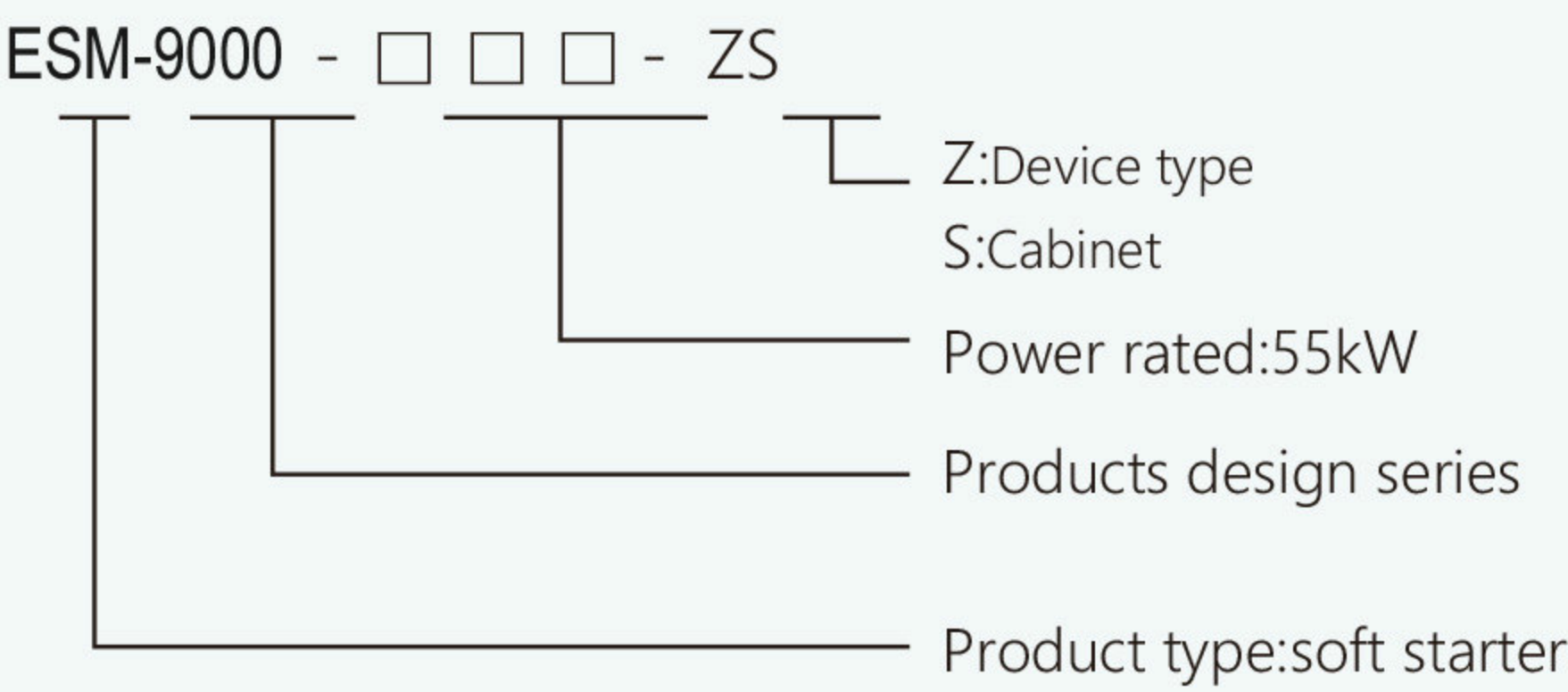Late acceleration
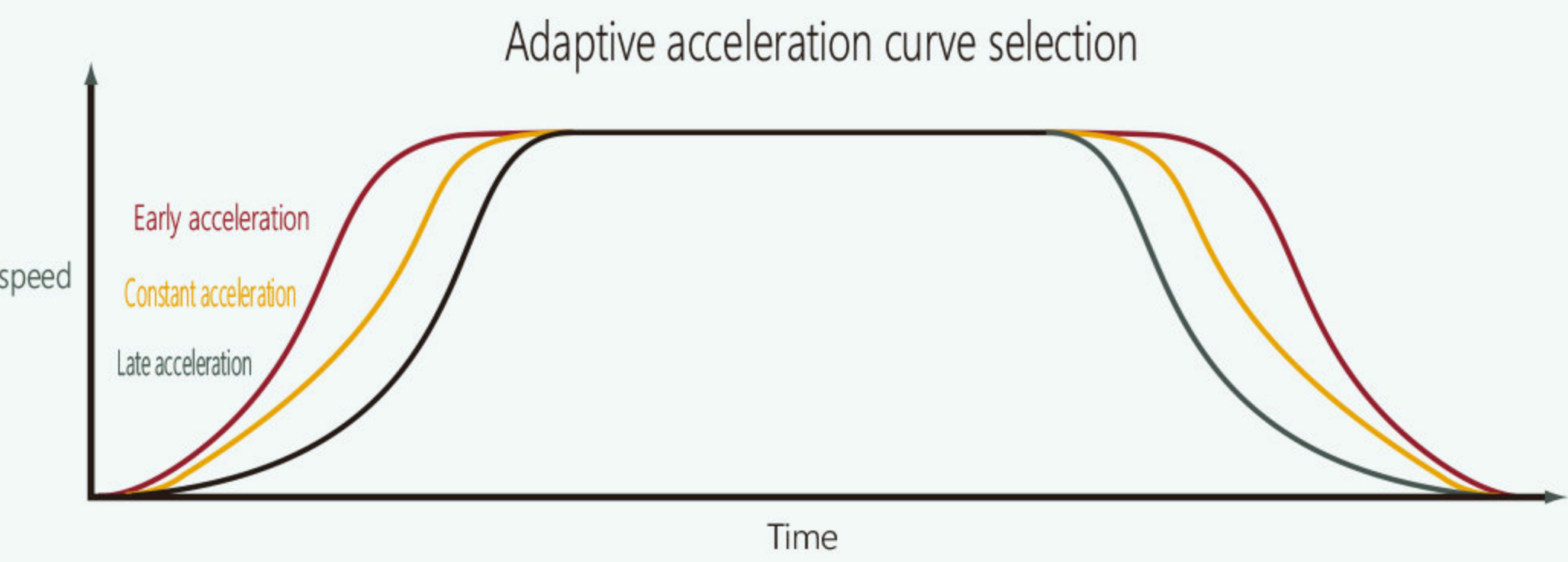
Time

Adaptive acceleration offers three start and stop curves to suit your needs. ESM-9000 simplifies installation and operation of motor starting system, thus reducing installation cost and reducing cost Short installation time.

⊙ Easy to use

➤ ESM-9000 is easy to use during installation, debugging, and operation, as well as during troubleshooting.

➤ Quick setup allows the machine to run quickly and display tripping messages in real language that indicate exactly what went wrong.

➤ The control entry line can be selected from the top, bottom or left, which is very flexible. The unique cable access and fixing device make the installation faster and tidy.

⊙ Model selection definition

ESM-9000 - □ □ □ - ZS

- Z:Device type
- S:Cabinet
- Power rated:55kW
- Products design series
- Product type:soft starter

5.5kW- 55kW   75kW- 110kW   132kW- 315kW   350kW- 600kW

Real – time language display

ESM-9000 displays feedback in real language and you don't have to look up the code to see what's going on.Tracking motor performance has never been easier, thanks to real-time metering displays and 99 event logs with time-stamped operational and performance details.

Graphical displa

In many cases, we do not use words, but use real-time motor performance diagrams and current diagrams to quickly and clearly illustrate the motor operation.

Remote display installation

With an optional panel mounting kit, the panel is easily mounted outside the cabinet.
If multiple soft starters are installed in a single cabinet to facilitate centralized control in one place, all relevant information can be obtained.
Multiple monitors can also be mounted side by side to quickly diagnose problems.
(after installation, the protection level is Ip65)

Program multiple devices

When programming multiple devices, the data can be downloaded immediately by inserting the operating board into different starters.

Measurement and monitoring

ESM-9000 displays A lot of information and can replace additional power meters (A, kW, kVA, pf).

Stop smoother

Soft stop can also be precisely controlled, suitable for applications where a smoother soft stop is required, which can greatly reduce or even eliminate water hammer effect

Overdrive is more intelligent

ESM-9000 allows you to control motor start.You can choose the best soft start control method according to the application requirements.
For applications requiring precise control of motor starting current, ESM-9000 provides a constant current or current ramp starting mode for your choice.

Simulation

The true-proof function allows you to test the working condition of the soft starter, the external control circuit and related equipment without needing to turn the soft starter :
➤ Running simulation: simulate motor starting, running and stopping
➤ Protection simulation: simulate the activation。
➤ Signal simulation: simulation output signal.

Bypass contactor

No need to install the external bypass contactor, the new built-in bypass contactor, compared with the ordinary ac contactor, performance improved by 3 times, heat dissipation 2.6 times, safety 25%, energy saving 20% service life up to 100,000 times.

Brake

For large inertial loads, sckr1-7000 incorporates the latest braking algorithm from kc, allowing you to accurately control the motor stop time.resulting in increased productivity.

Advanced operation

ESM-9000 has many advanced functions, which can meet the unique application requirements.
➤ Pumping (eg. high head applications)
➤ Compressor (optimized load control)
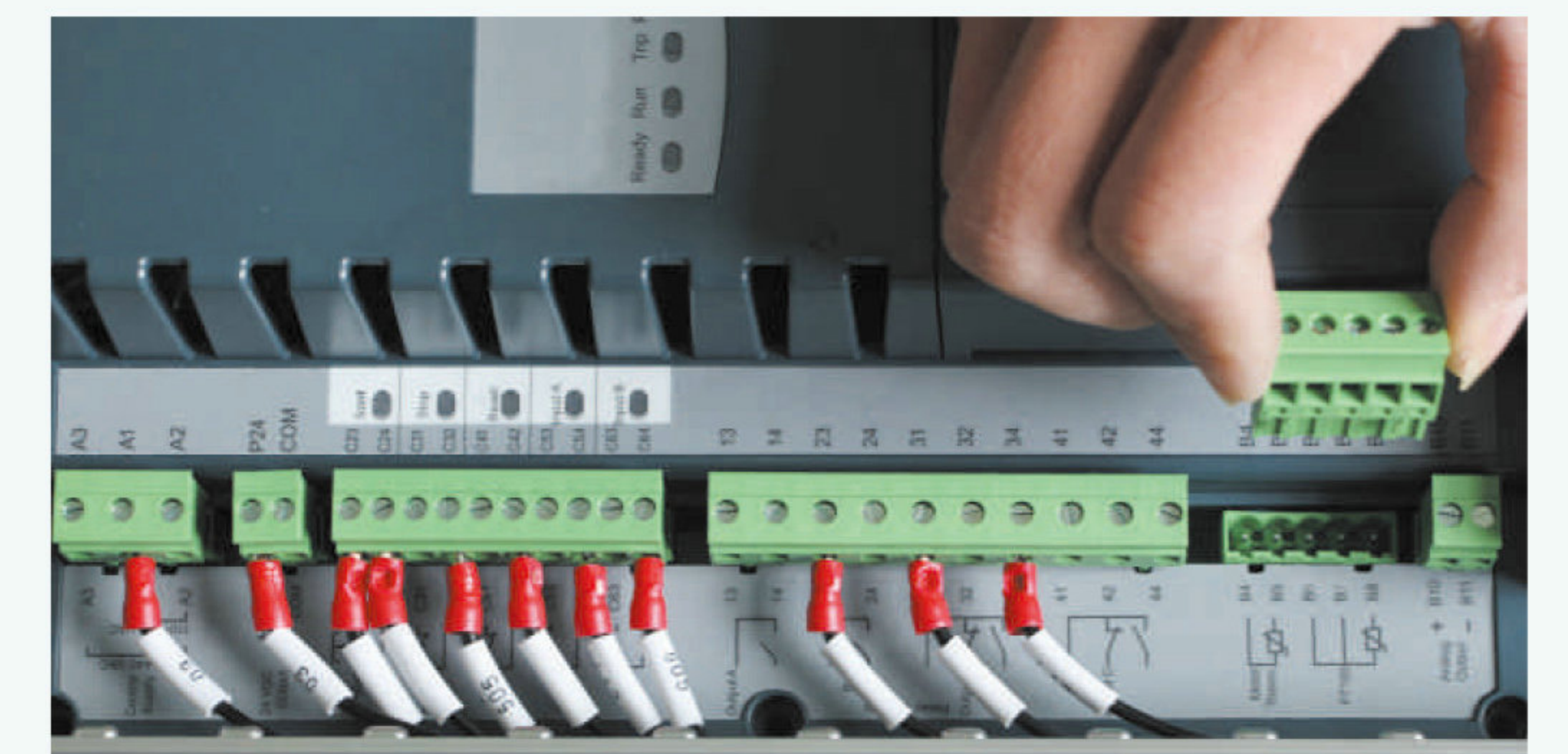➤ Band saw (easy alignment of blades)
➤ Irrigation system (built-in timer)

Easy to install

If the motor control center space is limited, use the compact design of ESM-9000 can save space and eliminate unnecessary trouble.Built-in bypass contactors, built-in monitoring and indicators, and numerous control built-in input and output functions reduce the space and cost of external installation and simplify installation.

Removable connectors and unique connectors

With plug - and - pull control wiring bar, it is easy to install.Simply unplug each wiring bar and reinsert the wiring bar after connecting.
Cables can be arranged using ESM-9000 flexible cable routing, which can be run from top, left or bottom.

◆ Soft starter function introduction

Easy to install and remove
Use of mounting holes

Top and bottom cable mounting
Set, make step line beautiful and neat

Small size, saving
space

Big screen displays in real language

Status LED indicator displays instant feedback

Start, stop, reset, local/remote buttons

Ip65 removable panel can be
To be installed outside the cabinet

Easy access door enables operator
You can't see the lead, but it's easy for the installer
Easy handling conductor

A unique connector separates the leads for easy
installation and allows flexible wiring from top, left,
or bottom

◆ Starting function

➤ Adaptive acceleration
➤ Constant current starting mode
➤ Current ramp starting mode
➤ Kick start

◆ Stop function

➤ Adaptive deceleration
➤ TVR soft stop
➤ Braking way
➤ Taxi stop

◆ Dashboard

➤ Remote installation options
➤ Status LED indicator
➤ Legible screen
➤ Real language feedback
➤ Multilingual selection
➤ Shortcut button

◆ Protection

➤ Motor thermal model
➤ Fully customizable protection
➤ Motor thermistor input
➤ The phase sequence
➤ Owe current
➤ Instantaneous overcurrent
➤ Auxiliary tripping input
➤ Radiator overheating
➤ Start time timeout
➤ Power frequency
➤ Short circuit SCR
➤ The power supply circuit
➤ Electrical connection
➤ RS485 fault
➤ Motor overload
➤ Current imbalance
➤ Earth fault (optional)

◆ Other features

➤ Starter communication timeout
➤ Network communication trip
➤ Automatic detection of external connection
➤ Programmable automatic start/stop
➤ 24VDC auxiliary power supply
➤ PT100 (RTD) input
➤ Real time clock with backup battery
➤ Forced pass-through - even if the power component occurs
  Failure, also can choose continuous work.This Production
  shall not be interrupted when measures are taken.
➤ Low speed forward and low speed reverse functions
➤ I/0 extension card (optional)

◆ External wiring diagram

➤ Conventional
  Current range .... 23A-1600A (rated)
  Electrical connection....................... triangular connection
  Bypass .... Integrated built-in or external

➤ Power supply
  power supply voltage(L1, L2, L3)
  ESM-9000- xxxx- V4.................200VAC- 440VAC (±10%)
  ESM-9000- xxxx- V7...... 380VAC- 690VAC (±10%)
  ESM-9000- xxxx- V7...380 ~ 690 VAC (± 10%) (earthed star
  supply system only)
  control voltage(A1, A2, A3) .... 110-220VAC (+10%/-15%)
  .... 230-440VAC (+10%/-15%)
  .... 24 VAC/VDC (± 20%)
  Power frequency..................................... 45-66 Hz

➤ input
  input............................ 24VDC , 8 mA
  start(C23, C24) .... Normally open
  stop(C31, C32)................................Normally close
  reset(C41, C42) .... Normally closed or normally closed
  Programmable input
  inputA (C53, C54) .... Normally closed or normally closed
  inputB (C63, C64) .... Normally closed or normally closed
  Motor thermistor(B4, B5)
  PT100 RTD (B6, B7, B8)

➤ Input
  Relay output..................... 10A @ 250VAC Impedance circuit
  ....5A @ 250VAC, AC15 pf 0.3
  Operating relay(23, 24) .... Normally open
  Programmable output
  RelayA (13, 14) .... Normally open
  RelayB (31, 32, 34)........................ Normally open/ closed
  RelayC (41, 42, 44)........................ Normally open/closed
  Analog output(B10, B11)................... 0-20mA or 4-20mA
  24VDC(P24, COM)........................ 200mA

➤ Environment
  Protection
  ESM-9000- 0023B   ESM-9000 -0105B............ IP20 & NEMA1
  ESM-9000-0145B   ESM-9000 -1600C..................... Ip00
  Working temperature .... -10℃ to 60℃
  Storage temperature.............................-10℃to+60℃
  humidity................................ 5%to95%Relative humidity
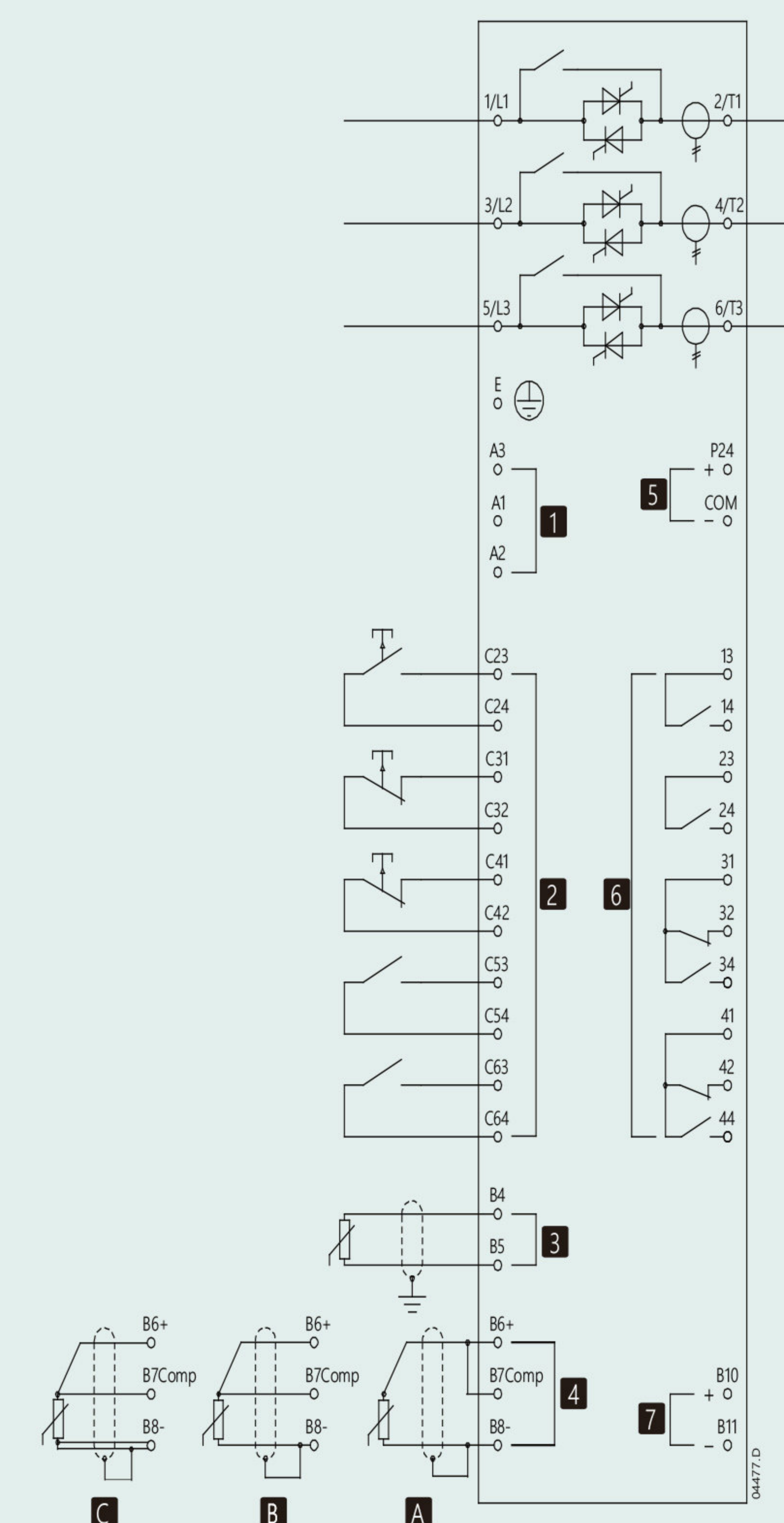
Only controllers with the suffix B have built-in bypass functions.
1: control voltage (depending on model)
2: remote control input port
3: motor thermistor
4B: RTD/PT100 input terminal (2 lines)
4C: RTD/PT100 input terminal (3-line)
4C: RTD/PT100 input terminal (4-line)
5: 24 VDC output terminal
6: relay output
7: analog input

Size and weight

Voltage level	Rated working current	Rated power	Display mode	para meter	Pro tect	Terminal	Overload capacity
380V	22A- 630A	11kW- 315kW	variety of languages	96	24	32	150%Ie,35s
660V	22A- 630A	11kW- 500kW					200%Ie,15s
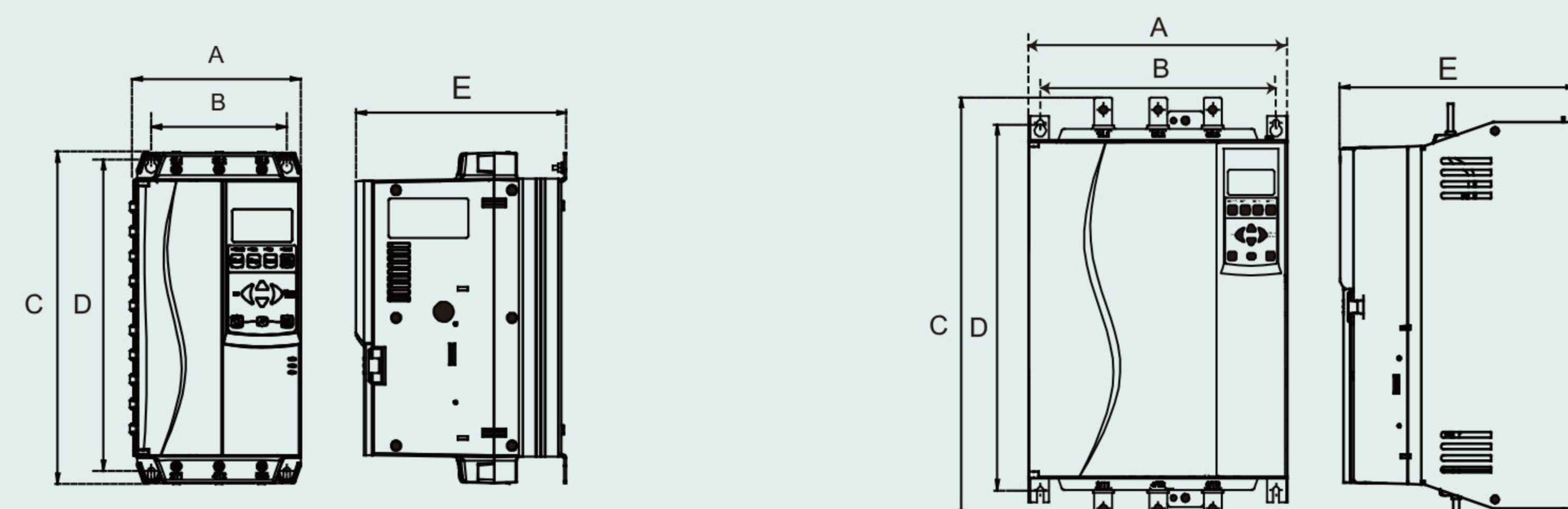
1   ESM-9000 - 11kW~55kW

2   ESM-9000 - 75kW~110kW
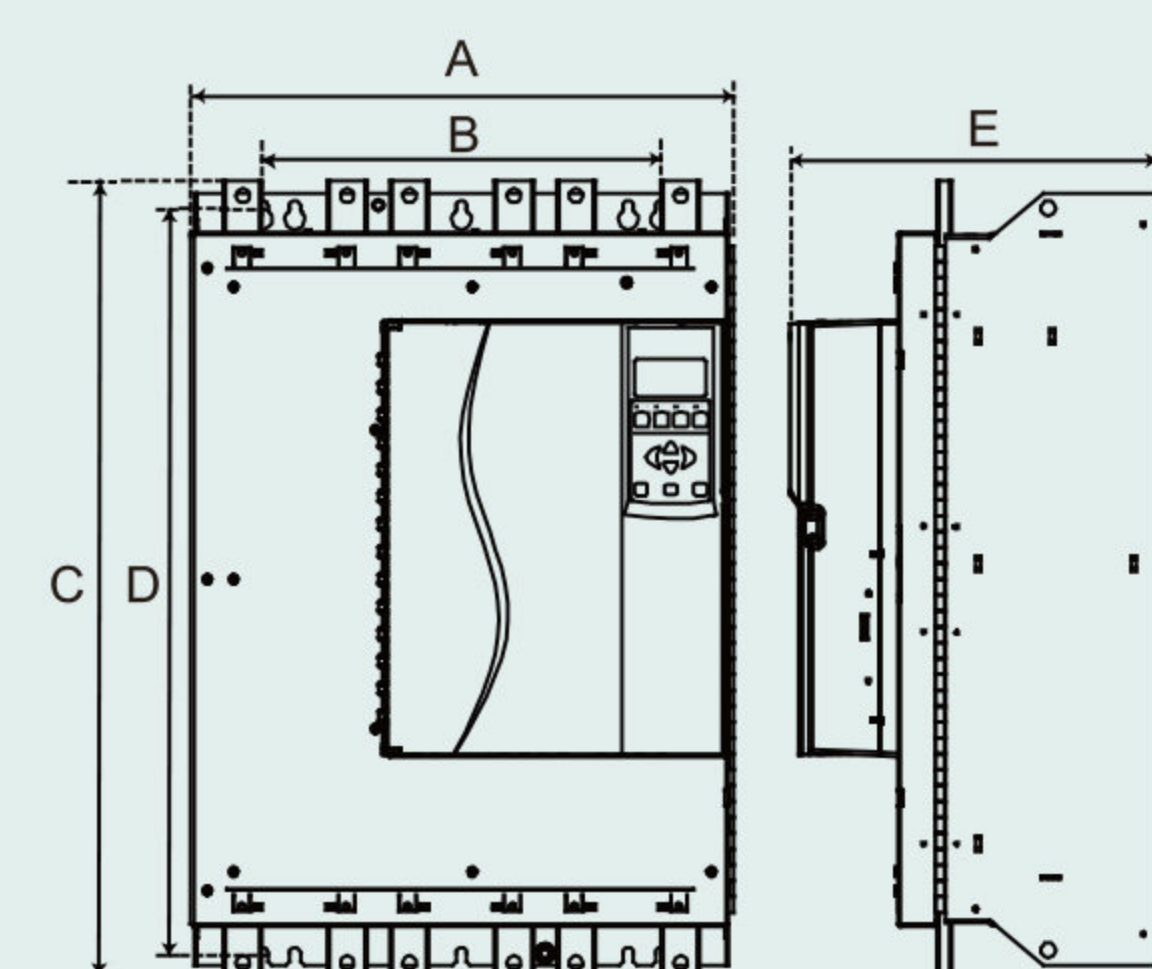
3   ESM-9000 - 132kW~315kW

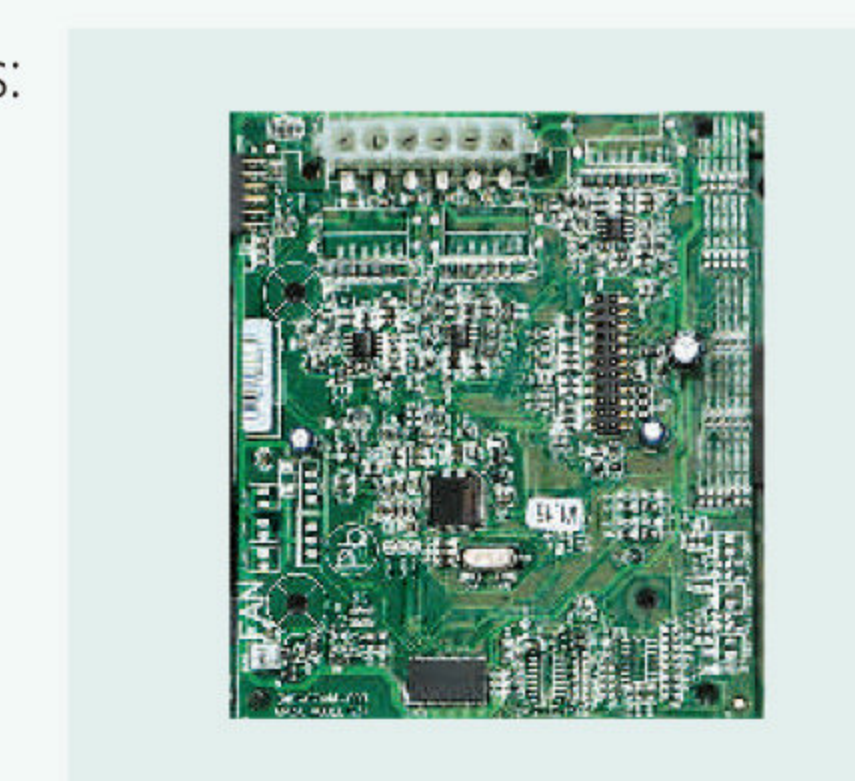| Specifications	Outline dimension(mm)			Install dimention(mm)			Draw
	A	C	E	B	D	d	
11kW- 55kW	156	295	223	124	278	M6	1
75kW- 110kW	282	438	250	250	380	M8	2
132kW- 315kW	430	620	296	320	600	M8	3

Pass module

With a convenient communication interface module, **ESM-9000** can conduct USB and network communication using Profbus,Device Net and Modbus RTU protocols.

Input/output card

These hardware extension CARDS are for users who need additional input and output or advanced functionality.

➤ Two input
➤ 3 relay outputs
➤ 1 analog input
➤ 1 analog input

RTD and ground fault

RTD provide the following additional inputs:

➤ 6 PT100RTD inputs
➤ 1 grounding fault input
➤ To use earth fault protection,
   You need to use a 1000:1
➤

Adjustable bus configuration

ESM-9000-0360c to **ESM-9000**-1600c bus line can be adjusted as required.This flexibility allows you to optimize switch cabinet layout。
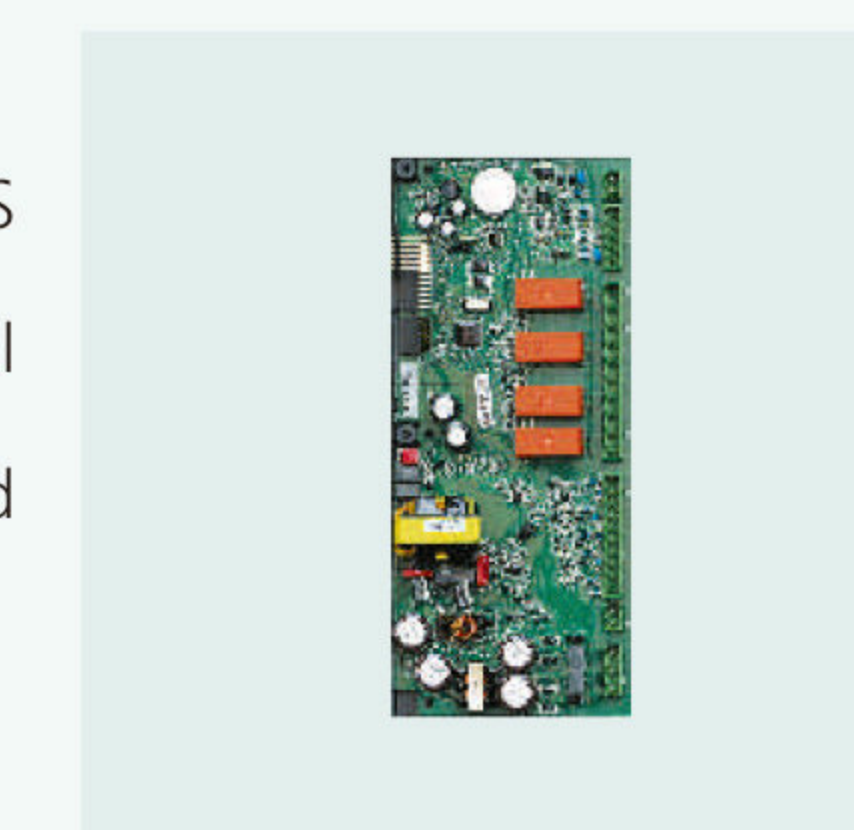
Finger protector

Finger protector prevents accidental contact with live terminal to protect personal safety.Finger protector is suitable for **ESM-9000** -0145b to **ESM-9000** -0220b type. IP20 protection can be provided if the cable diameter is 22mm or above.