

V5

ELECTRONIC SOFTSTARTER

Easy to drive





We had always dreamt about an integral service that included, commissioning support, 24 hour technical assistance, rapid workshop response with less than 1 day repair or replacement commitment. Three year warranty, immediate delivery, customized training and professional application engineering.

A dream
a promise,
the commitment.



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**MOUNTING
SIMPLICITY AND
VERSATILITY**

Its cabinet format provides a fast installation and easy access to power and control terminals. Only one common Control PCB is enough to service all V5 Series.



**24 HOURS
TECHNICAL
ASSISTANCE**

Power Electronics assures technical assistance service to all his customers and users 24hrs.

**2,2kW - 1,5MW
230 - 690V**



01 V5 SERIES

>electronic softstarter



V5 Series is the 4th POWER ELECTRONICS Softstarter generation. A new electronic softstarter that integrates most advanced control systems to assure a perfect motor operation at any industrial application.



NEW CONCEPT OF SOFTSTARTER

After 25 years of experience and more 100.000 softstarters actually working, POWER ELECTRONICS V5 Series has achieved a new concept of softstarter.



CONTROL FLEXIBILITY

Commissioning via local display unit or PC (PowerCOMS Program). Two analogue and five digital inputs, three relays and one analogue output provide the V5 with plenty of control possibilities.

RS232/RS485 serial communications and Modbus are built-in. Profibus, DeviceNet and Johnson Controls (Metasys) protocols are available.



02 V5 SERIES

>one softstarter for all applications



High performance and results

The V5 Series provides immediate and exceptional results in most of industrial applications.

Mechanical costs reduction as consequence of shaft damages, hammer effects, belts or mechanical coupling wear elimination.

Electrical maintenance reduction by simplifying electrical installation concept and by eliminating electrical stress due to starting current surges.



Applications

PUMPING SYSTEMS

Low starting torque and controlled stop avoids water hammer surge effect of the hole hydraulic installation. Limited starting current reduces mechanical and electrical stress.

MILLS AND CRUSHERS

Typical applications where the Power Electronics exclusive CDP (Dynamic Torque Control) provides acceleration without overloads, starting these types of machines with load by controlling a soft start even with very high starting torque.

VENTILATION AND COOLING SYSTEMS

Fan lifetime can be increased by improving the starting torque and reducing starting current.

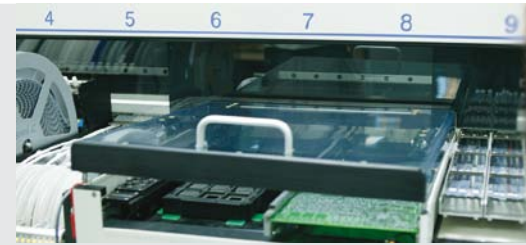
PRODUCTION AND PROCESS SYSTEMS

Conveyors, mixers, extruders, and all those applications requiring any mechanical load shock elimination during controlled soft start and stop.



O3 V5 SERIES

> advanced features and functions

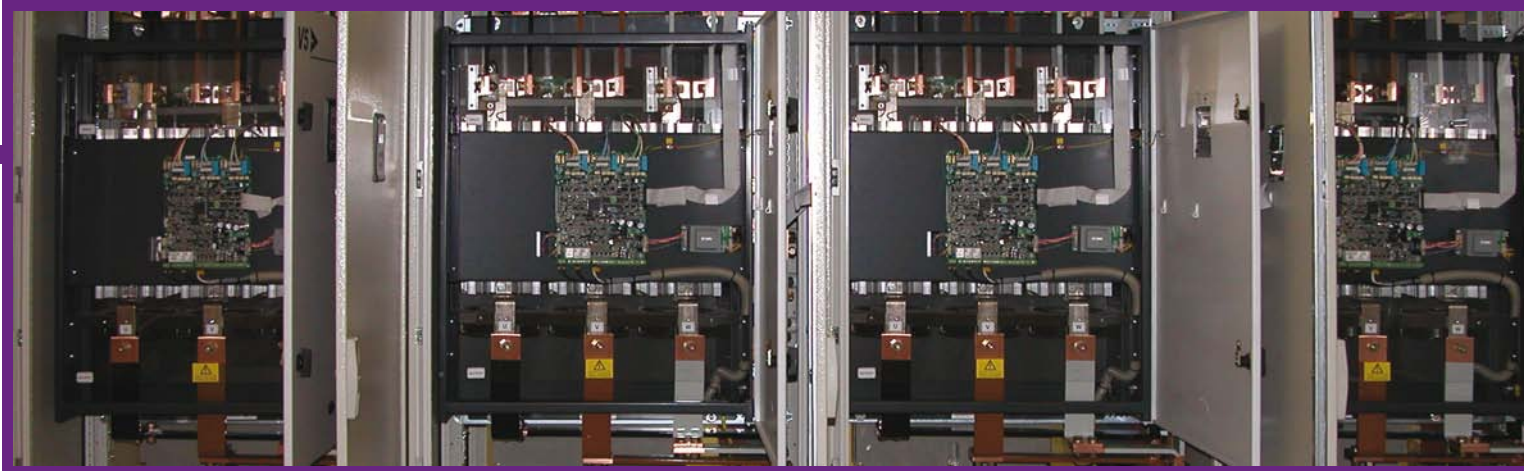
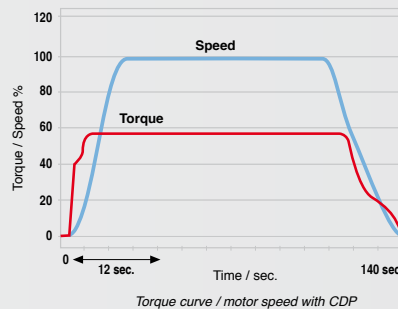


SLOW SPEED

V5 Series allows torque adjustment (CDP) at slow speed, thus it will adapt to any type of load requirement. This setting is ideal for machine positioning, as ceramic mills, etc.

CDP: DYNAMIC TORQUE CONTROL

V5 Series are featured with "Dynamic Torque Control, exclusive starting method from Power Electronics, it means progressive soft starting in those high inertia applications. With this control algorithm, progressive acceleration and optimization of starting current peak is achieved.



SERIAL COMMUNICATIONS

V5 is available with in-built RS232/485 serial ports, developed for integration into the most commonly used industrial communication protocols.

While MODBUS protocol is standard, other protocols are supported including PROFIBUS-DP, DeviceNet.

EXTERNAL OR BUILT IN BYPASS

V5 softstarter offers both possibilities. The user can choose the standard model offering the possibility of installing an **external** contactor for bridging the power stage once acceleration ramp is finished, until the start of deceleration ramp. Otherwise the user can choose the new V5 model with **built in** bypass which will offer the same functionality without requiring any external device installation.

In any case, V5 **control** stage remains monitoring all control operations and motor **protections**.

D.C. BRAKE

In some applications the deceleration ramp is not enough. DC Injection setting is provided in V5 Series for those, specially in high load inertia machines.

PUMP CONTROL

An special designed control algorithm for decelerating pumps is provided in V5 Series. This special adjustment does not operate in function of lineal stop curve for quadratic torque loads, as it is normally operated, but automatically it will adapt to hydraulic system curve.

FULL PROTECTIONS

All protections included in V5 Series are translated to a better control and motor security.

- Input phase loss
- Rotor locked
- Phase imbalance > 40%
- High input voltage
- Low input voltage
- Motor overload
- Motor underload
- Motor overtemperature PTC
- Shearpin current
- Input phase sequence



PERMANENT INFORMATION

V5 Series displays constantly, motor status and complete information of the installation where it is integrated. The user will access locally (keypad unit) or remote (serial communications) to the following information:

- Voltage in each phase
- Number of starts
- Total and partial
- Power (kW) and current (I) in each phase
- Analogue input / output status
- Motor phi cosine (Power Factor)
- Digital input / output status
- Motor shaft torque
- Timer, total and partial
- Fault history (5 most recent faults)

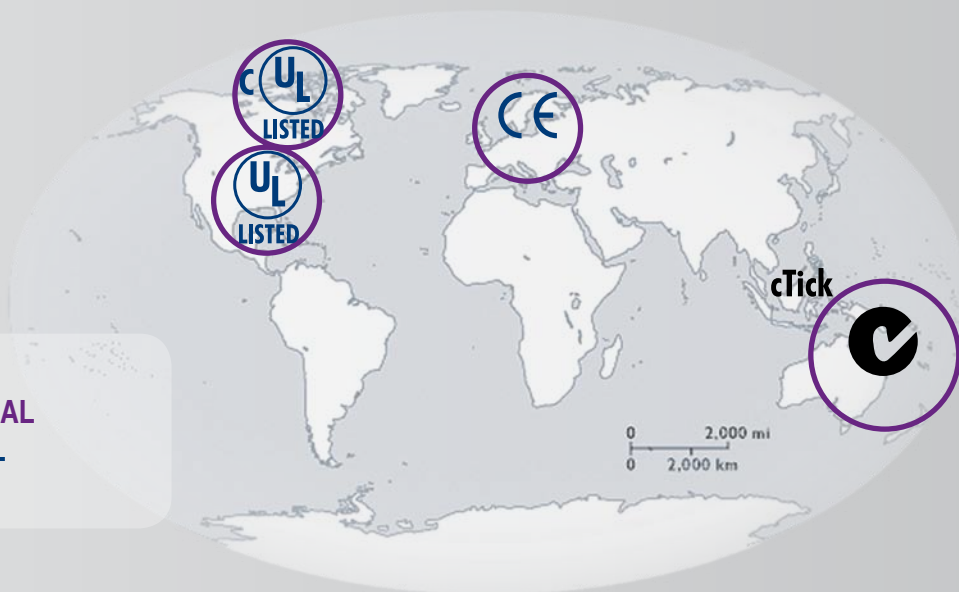
INTEGRATION AND CONTROL

V5 Series make easy its integration into any automation process. Via 2 analogue inputs 0-10V and 4-20mA, 5 configurable digital inputs, 1 PTC input, 1 analogue output 4-20mA and 3 changeover configurable relays.

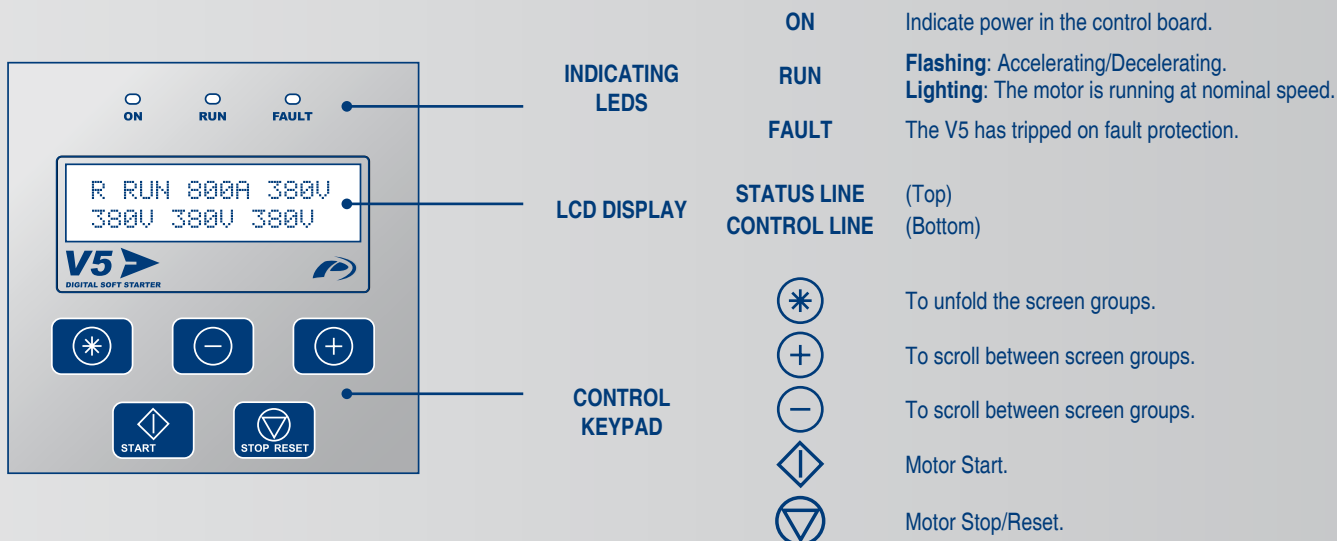
MULTIVOLTAGE

Only one softstarter for 230V / 400V / 440V and 500V, simply adjusting V5 current to motor's. For 690V, please consult tables available at *standard ratings* section.

COMPLIES WITH INTERNATIONAL STANDARDS CE, cTick, UL, cUL



Display Unit + Keypad Control



04 V5 SERIES > technical specifications

| | | | |
|--|---|--|--|
| INPUT | Input voltage | (~3 Phase) 230-500V (-20% to +10%) (~3 Phase) 690V (-20% to +10%) | |
| | Supply frequency | 47 to 62 Hz | |
| | Control voltage | 230V ±10%, others under demand | |
| OUTPUT | Output voltage | 0 to 100% supply voltage | |
| | Output frequency | Same as the input | |
| | Efficiency (at full load) | >99% | |
| ENVIRONMENTAL CONDITIONS | Ambient temperature | Minimum: -10°C / Maximum: +50°C | |
| | Storage Temperature | 0°C to +70°C | |
| | Ambient Humidity | < 95%, non-condensing | |
| | Altitude losses | >1000m, 1% each 100m; 3000m max | |
| | Protection degree | IP20 | |
| MOTOR PROTECTIONS | Degree of Pollution | Degree of Pollution 3 | |
| | Input phase missing | | |
| | High current | | |
| | Low input voltage | | |
| | Starting current limit | | |
| | Rotor locked | | |
| | Motor overload (thermal model) | | |
| | Underload | | |
| | Phase unbalance | | |
| | Motor overtemperature (PTC, normal status 150R-2K7) | | |
| | Shearpin current | | |
| | Number of start /hour | | |
| | SOFTSTARTER PROTECTIONS | Thyristor fault | |
| V5 over temperature | | | |
| ADJUSTMENTS | Torque surge | | |
| | Initial torque | | |
| | Initial torque time | | |
| | Acceleration time | | |
| | Current limit: 1 to 5 I _n | | |
| | Overload: 0.8 to 1.2 I _n , Overload slope: 0 to 10 | | |
| | Deceleration time / Freewheel stop | | |
| | DC braking | | |
| | Slow Speed (1/7 fundamental frequency) | | |
| | Dual setting | | |
| | Number of starts allowed | | |
| | Torque control | | |
| | Water hammer surge control stop | | |
| | For additional information consult the technical manual | | |
| | INPUT SIGNALS | 2 analogue inputs, 0-20mA or 4-20mA, 0-10V | |
| | | 5 configurable digital inputs | |
| | | 1 PTC input | |
| | OUTPUT SIGNALS | 1 analogue output 0-20mA or 4-20mA | |
| | | 3 changeover output relays (250VAC, 10A non inductive) | |
| SERIAL COMMUNICATIONS | Physical level RS232/RS485 | | |
| | Modbus communication industrial protocol | | |
| | Profibus and DeviceNet via interface (options) | | |
| DISPLAY INFORMATION | Phase current | | |
| | Supply voltage | | |
| | Relays status | | |
| | Digital inputs / PTC status | | |
| | Analogue inputs value | | |
| | Analogue output value | | |
| | Overload status | | |
| | Motor supply frequency | | |
| | Motor power factor | | |
| | Developed power, motor shaft torque | | |
| | Fault history (5 most recent faults) | | |
| | SOURCES CONTROL | Local via keypad | |
| | | Remote via digital inputs | |
| Remote via Serial Communications (MODBUS, RS232/RS485) | | | |
| LED'S INDICATIONS | LED1 Green, voltage present on control board | | |
| | LED2 Orange, Blinking, Motor accelerating / decelerating On, motor running | | |
| | LED3 Red, fault present | | |

05 V5 SERIES

> control & power wiring configuration

V5 Series includes multiple control possibilities, not only due to a large number of inputs and outputs, but for the configuration versatility of each one of them.

DIGITAL INPUTS

Five digital multifunction inputs available. All of these can be set as preset configuration or individually. The 6th digital input is designed to be the PTC input (motor). All of digital inputs can be used as an emergency stop. Digital inputs common is 24VAC.

ANALOGUE INPUTS

Two analogue inputs available. Each of the analogue inputs is configurable as 0 to 10V, 0-20mA and 4-20mA. Each of the analogue inputs scale can be set via software.

OUTPUT RELAYS

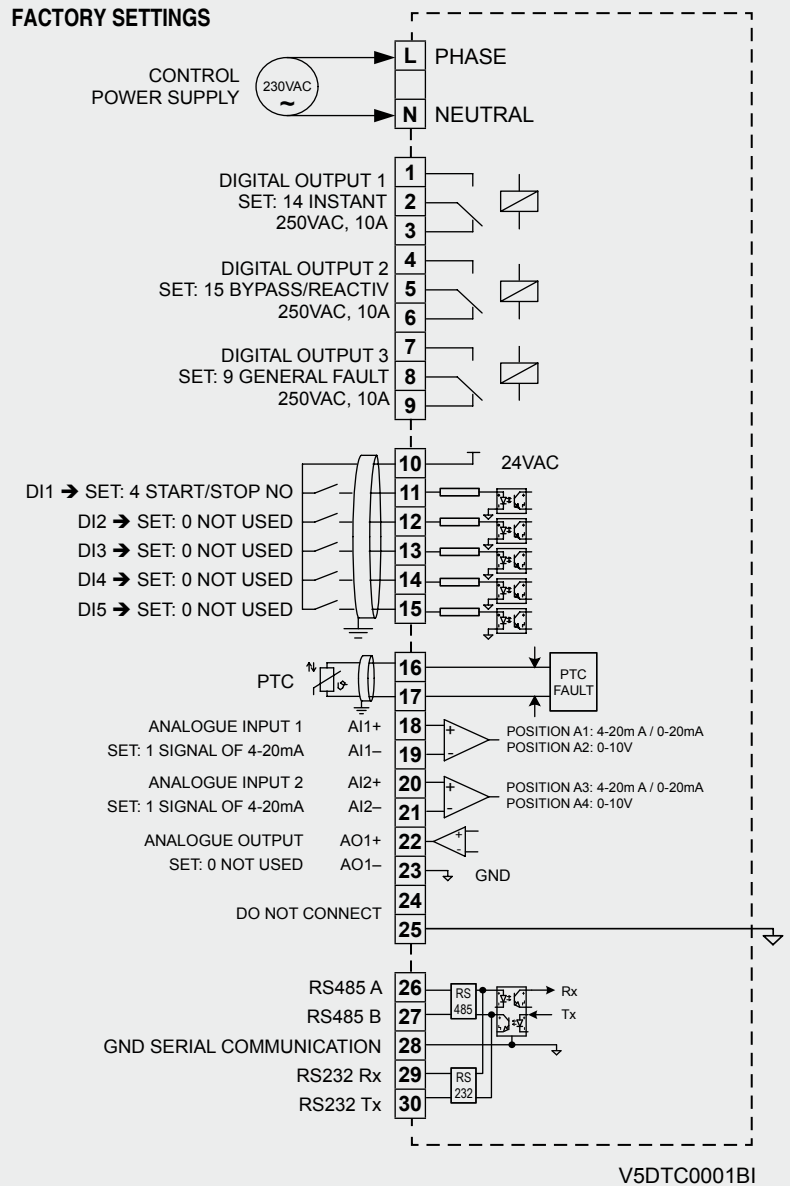
Three changeover output relays available. Contact specifications are 250VAC, 10A, non inductive. Three comparators available, each of them configurable from eight different sources.

ANALOGUE OUTPUT

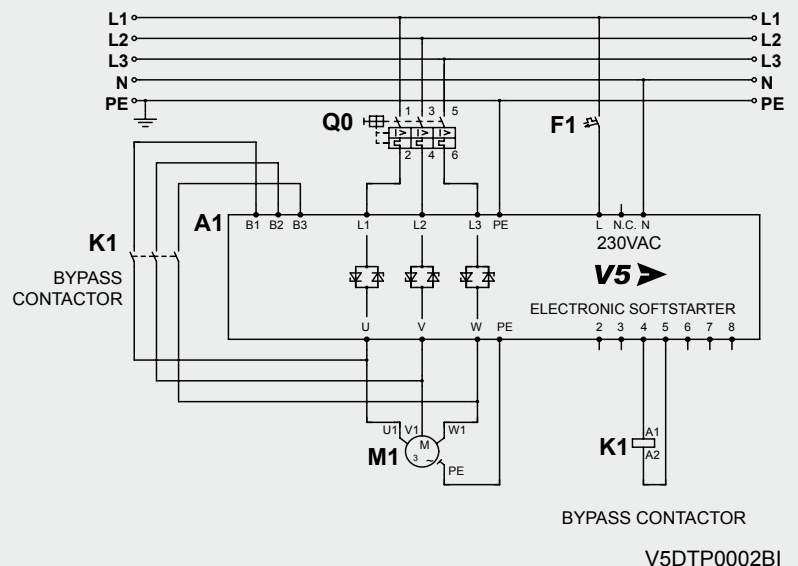
One analogue output configurable to operate as 0-20mA, 4-20mA. Analogue output gain can be set as desired.

Standard softstarter

CONFIGURATION OF CONTROL WIRING FOR STANDARD SOFTSTARTER OF THE V5 SERIES



CONFIGURATION OF POWER WIRING FOR STANDARD SOFTSTARTER WITH EXTERNAL BYPASS OF THE V5 SERIES



06 V5 SERIES

> bypass built in

The new V5 model offers the Bypass contactors already built in, making easy the required external hardware and consequently saving space in the electrical cabinets, as well as reduces the installation time and the wiring verification.

Therefore, those errors derivate of the external installation will be avoided and no additional documentation will be required either.



On the other hand, **heat dissipation** during operation is much more **reduced** which means the corresponding **saving in ventilation** components in the implemented electrical cabinets.

Because of the **current measurement** of the softstarter does **not** suffer any **change** and the **internal protections are active**, the motor **protection is ensured** during operation regardless the bypass activation.

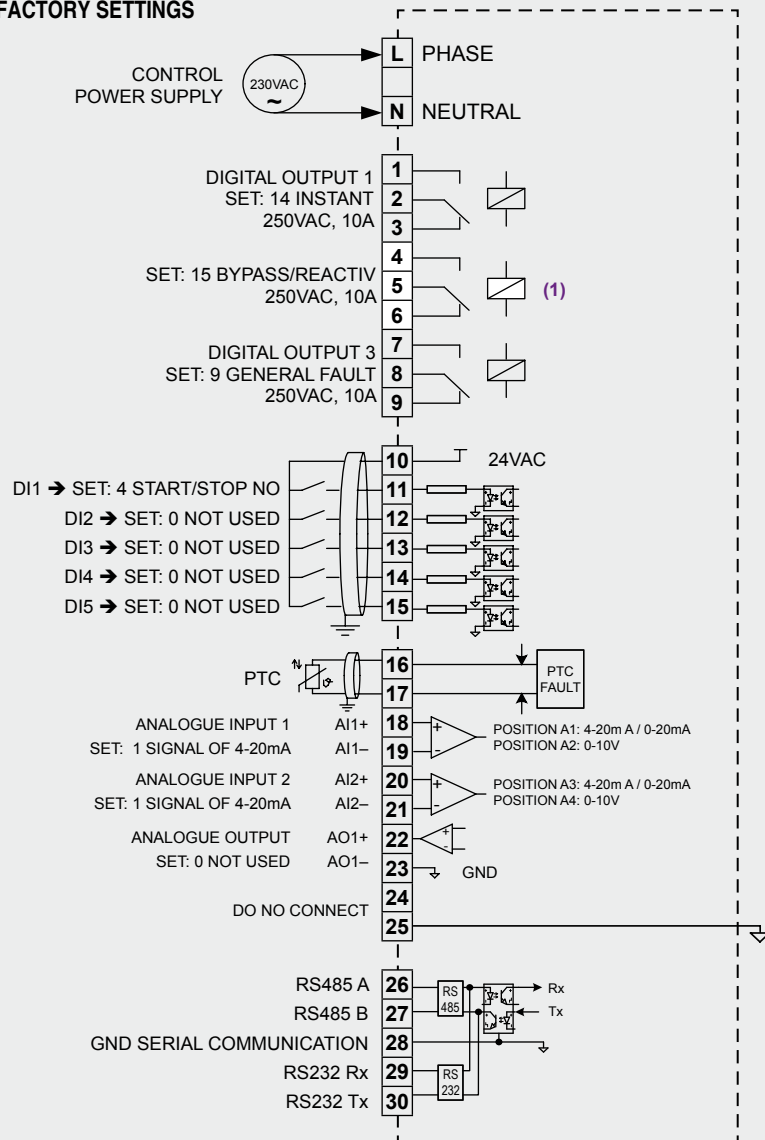
The **internal bypass** is automatically switched on **after** the **acceleration** ramp, bridging the internal SCRs but **without interrupting** the normal **operation** of the softstarter and the motor.

At the end, the connection is easy, safe and effective.

Softstarter with internal Bypass

CONFIGURATION OF POWER WIRING FOR SOFTSTARTER WITH INTERNAL BYPASS

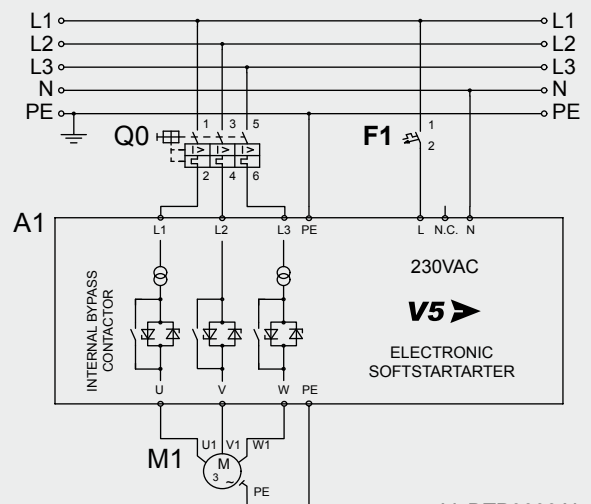
FACTORY SETTINGS



(1) Reserved for internal Bypass activation

V5DTC0002AI

CONFIGURATION OF POWER WIRING FOR SOFTSTARTER WITH INTERNAL BYPASS



V5DTP0003AI

THE NORM IEC60947-4-2 DESCRIBES CLASSIFICATION FOR ELECTRONIC SOFTSTARTERS.

According to this information, there are two utilisation categories for the Electronics Softstarters, described as follow:

- AC53a: Softstarters which support the nominal current through the SCRs during continuous operation.
- AC53b: Softstarters which support the starting current through the SCRs during the starting while the SCRs will be bypassed during steady status.

Basically, the capacity limitation of Softstarters is mainly thermal limitation. It is important to consider that there are five different factors which will affect to the internal temperature of thyristors:

- a) Starting Time
- b) Starting Current
- c) Ambient Temperature
- d) Time at OFF status
- e) Number of Startings per Hour

EXAMPLE

| | | | | | | | |
|-----|---|-------|-----|---|----|---|-----|
| 110 | : | AC53b | 4.5 | - | 30 | : | 330 |
| ① | | ② | ③ | | ④ | | ⑤ |

- ① Rated Current of the Softstarter under the described conditions: I_n , (110 Amps)
- ② The thyristors will be bypassed
- ③ Starting Current, as multiple of the nominal current (I_n), that means: $4.5 \times I_n$
- ④ Starting Time, in seconds, (30s)
- ⑤ Seconds between the end of starting and the beginning of next starting (10 startings per hour)

This classification explains why the same softstarter offers many current rates and also explains why it is necessary to consider the operation conditions in each single application.

Power Electronics can provide some basic recommendations to select the correct V5 model depending on the application.

It is important to consider that this application must be a standard industrial application in which the softstarter will operate within the **standard rates** of 10 startings per hour, 50% of duty cycle, 50°C and the altitude $\leq 1000\text{m}$.

Note: In case your application cannot be classified under the above mentioned conditions, please, contact with Power Electronics.

SELECTION OF SOFTSTARTER

- a) Select the characteristics current in the attached table according to the application.
- b) After this, consult the column for this current rate in the rating tables shown in the next section (3x, 4x, or 4.5 times starting current).
- c) Chose the correct model, considering also the maximum rated current, the rated power and the supply voltage.

EXAMPLE

The application is: Refiner Pumps, 400VAC, 83A, 45kW motor.

Characteristics starting current of Refiner Pumps if 10 startings per hour, 50% duty cycle, 50°C and altitude $\leq 1000\text{m}$: $4.0 \times I_n$

Look at 400VAC table, central column (AC53b 4.0-30:330) 45kW means one softstarter coded V50075B with nominal current of 85A

| COMMON APPLICATIONS | CHARACTERISTIC STARTING CURRENT |
|---|---------------------------------|
| WATER AND WASTEWATER | |
| Centrifugal Pumps | $3.0 \times I_n$ |
| Mono and High Pressure Pumps | $4.0 \times I_n$ |
| Multistage Pumps | $4.0 \times I_n$ |
| Vertical Pumps | $3.0 \times I_n$ |
| Split Chamber Pumps | $3.5 \times I_n$ |
| Submersible Pumps | $3.5 \times I_n$ |
| VENTILATION | |
| Fans (extraction) | $3.5 \times I_n$ |
| Fans (fresh air) | $4.5 \times I_n$ |
| Condensor Fans | $3.5 \times I_n$ |
| Climatization Turbine | $4.5 \times I_n$ |
| PULP AND PAPER INDUSTRY | |
| Refiner Pumps | $4.0 \times I_n$ |
| Pulp Pumps | $4.0 \times I_n$ |
| Vacuum Pumps | $4.0 \times I_n$ |
| Pulp Machines | $4.5 \times I_n$ |
| Trommels | $4.0 \times I_n$ |
| Pulp Mixers | $4.0 \times I_n$ |
| Filters | $4.0 \times I_n$ |
| METALS, AGGREGATES AND MINERALS | |
| Dust Filters Fans | $3.5 \times I_n$ |
| Conveyor Belts | $4.5 \times I_n$ |
| Crushers | $3.0 \times I_n$ |
| Hammer Mills | $4.5 \times I_n$ |
| Jaw Crushers | $4.0 \times I_n$ |
| Rotor Bar Mills | $4.5 \times I_n$ |
| Ball Mills | $4.5 \times I_n$ |
| Secondary Mills and Sand Pulverizers | $3.5 \times I_n$ |
| Eccentric Feeder | $4.5 \times I_n$ |
| Trommels | $4.0 \times I_n$ |
| Vibrators | $4.0 \times I_n$ |
| Separators | $4.0 \times I_n$ |
| Feeders | $3.5 \times I_n$ |
| FOOD INDUSTRY | |
| Air Compressors | $4.0 \times I_n$ |
| Sorters | $3.5 \times I_n$ |
| Bottle Wash Machines | $3.0 \times I_n$ |
| Driers | $4.5 \times I_n$ |
| Centrifuges | $4.0 \times I_n$ |
| Crushers, punchers | $4.5 \times I_n$ |
| Palletizers | $4.5 \times I_n$ |
| Separators | $4.5 \times I_n$ |
| Cutters | $3.0 \times I_n$ |
| Material Handling | $3.5 \times I_n$ |
| TOOLING MACHINES | |
| Arm Saws | $4.5 \times I_n$ |
| Buzz Saws | $3.5 \times I_n$ |
| Stamping Presses | $4.5 \times I_n$ |
| Crumbing Machines | $3.5 \times I_n$ |
| Chamfering Tools | $3.5 \times I_n$ |
| Flatters | $3.5 \times I_n$ |
| Sanding Machines | $4.0 \times I_n$ |
| Lathes | $4.5 \times I_n$ |
| Crusher Machines | $3.5 \times I_n$ |
| Palletizers | $4.5 \times I_n$ |
| Presses | $4.0 \times I_n$ |
| Turn Tables | $4.0 \times I_n$ |
| Transporters | $4.0 \times I_n$ |
| PETRO-CHEMICAL | |
| Centrifugal Machines | $4.0 \times I_n$ |
| Screw Pumps | $4.0 \times I_n$ |
| Gas Pumps (propane, butane, ...) | $3.0 \times I_n$ |
| Crude Oil Extraction Pumps | $4.5 \times I_n$ |
| Crude Oil Transfer Pumps | $4.5 \times I_n$ |
| Hydrocarbon Transfer Pumps (liquid stage) | $3.5 \times I_n$ |
| Transport and Packaging | $3.5 \times I_n$ |
| Conveyors | $3.5 \times I_n$ |
| GENERAL | |
| Hydraulic Equipment | $3.5 \times I_n$ |
| Agitators | $4.0 \times I_n$ |
| Compressors (Screw compressor, without load) | $3.0 \times I_n$ |
| Compressors (Reciprocating compressors, without load) | $4.0 \times I_n$ |
| Conveyors | $4.0 \times I_n$ |
| Mixers | $4.5 \times I_n$ |

07 V5 SERIES

> standard ratings

V5 standard softstarter

230V to 500V (-20% to +10%)

| FRAME | CODE | Rated I (A) | Power motor until (kW) | | | |
|-------|--------|-------------|------------------------|------|------|------|
| | | | 230V | 400V | 440V | 500V |
| 1 | V50009 | 9 | 2 | 4 | 5 | 5.5 |
| | V50017 | 17 | 5 | 7 | 9 | 11 |
| | V50030 | 30 | 9 | 15 | 18.5 | 18 |
| | V50045 | 45 | 14 | 22 | 25 | 30 |
| | V50060 | 60 | 18 | 30 | 35 | 40 |
| | V50075 | 75 | 22 | 37 | 45 | 50 |
| | V50090 | 90 | 25 | 45 | 55 | 65 |
| 2 | V50110 | 110 | 35 | 55 | 65 | 80 |
| | V50145 | 145 | 45 | 75 | 90 | 100 |
| | V50170 | 170 | 50 | 90 | 110 | 115 |
| | V50210 | 210 | 65 | 110 | 120 | 150 |
| | V50250 | 250 | 75 | 132 | 160 | 180 |
| 3 | V50275 | 275 | 85 | 150 | 170 | 200 |
| | V50330 | 330 | 100 | 185 | 200 | 220 |
| | V50370 | 370 | 115 | 200 | 220 | 257 |
| | V50460 | 460 | 145 | 250 | 270 | 315 |
| 4 | V50580 | 580 | 185 | 315 | 375 | 415 |
| | V50650 | 650 | 200 | 355 | 425 | 460 |
| | V50800 | 800 | 250 | 450 | 500 | 560 |
| | V50900 | 900 | 280 | 500 | 560 | 630 |
| | V51000 | 1000 | 322 | 560 | 616 | 700 |
| 5 | V51200 | 1250 | 400 | 710 | 800 | 900 |
| | V51500 | 1500 | 500 | 800 | 900 | 1100 |

690V (-20% to +10%)

| FRAME | CODE | Rated I (A) | Power motor until (kW) |
|-------|----------|-------------|------------------------|
| | | | 690V |
| 1 | V50009.6 | 9 | 7.5 |
| | V50017.6 | 17 | 15 |
| | V50030.6 | 30 | 30 |
| | V50045.6 | 45 | 45 |
| | V50060.6 | 60 | 60 |
| | V50075.6 | 75 | 75 |
| | V50090.6 | 90 | 90 |
| 2 | V50110.6 | 110 | 110 |
| | V50145.6 | 145 | 140 |
| | V50170.6 | 170 | 160 |
| | V50210.6 | 210 | 200 |
| | V50250.6 | 250 | 230 |
| 3 | V50275.6 | 275 | 250 |
| | V50330.6 | 330 | 315 |
| | V50370.6 | 370 | 355 |
| | V50460.6 | 460 | 450 |
| 4 | V50580.6 | 580 | 560 |
| | V50650.6 | 650 | 630 |
| | V50800.6 | 800 | 800 |
| | V50900.6 | 900 | 900 |
| | V51000.6 | 1000 | 960 |
| 5 | V51200.6 | 1250 | 1250 |
| | V51500.6 | 1500 | 1500 |

- NOTES:
- The values of the tables are valid for 4-pole AC motors.
 - For current values which are not in accordance with the values in these tables, please contact Power Electronics.
 - For higher power ratings, contact to Power Electronics customer support.

V5 softstarter with built in Bypass

400Vac (-20% to +10%)

| FRAME | CODE | AC53b 3.0-30:330 | | AC53b 4.0-30:330 | | AC53b 4.5-30:330 | |
|-------|---------|------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|
| | | Max. Rated I (A) | Motor Power (kW) at 400Vac | Max. Rated I (A) | Motor Power (kW) at 400Vac | Max. Rated I (A) | Motor Power (kW) at 400Vac |
| 1 | V50009B | 14 | 7,5 | 10 | 5,5 | 9 | 4 |
| | V50017B | 26 | 15 | 19 | 11 | 17 | 7,5 |
| | V50030B | 45 | 22 | 34 | 18,5 | 30 | 15 |
| | V50045B | 68 | 37 | 51 | 30 | 45 | 22 |
| | V50060B | 90 | 45 | 68 | 37 | 60 | 30 |
| | V50075B | 113 | 55 | 85 | 45 | 75 | 37 |
| | V50090B | 135 | 75 | 101 | 55 | 90 | 45 |
| 2 | V50110B | 165 | 90 | 140 | 75 | 110 | 55 |
| | V50145B | 218 | 110 | 164 | 90 | 145 | 75 |
| | V50170B | 255 | 150 | 192 | 110 | 170 | 90 |
| | V50210B | 315 | 185 | 237 | 132 | 210 | 110 |
| | V50250B | 375 | 200 | 281 | 150 | 250 | 132 |
| 3 | V50275B | 412 | 220 | 310 | 185 | 275 | 150 |
| | V50330B | 495 | 280 | 370 | 200 | 330 | 185 |
| | V50370B | 555 | 315 | 416 | 220 | 370 | 200 |
| | V50460B | 690 | 400 | 518 | 280 | 460 | 250 |
| 4 | V50580B | 870 | 450 | 650 | 355 | 580 | 315 |
| | V50650B | 975 | 500 | 731 | 400 | 650 | 355 |
| | V50800B | 1200 | 630 | 900 | 500 | 800 | 450 |

NOTE: Rated power and currents at 400VAC (-20% to +10%) for motors of 1500rpm

V5 softstarter with built in Bypass

500Vac (-20% to +10%)

| FRAME | CODE | AC53b 3.0-30:330 | | AC53b 4.0-30:330 | | AC53b 4.5-30:330 | |
|-------|---------|------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|
| | | Max. Rated I (A) | Motor Power (kW) at 500Vac | Max. Rated I (A) | Motor Power (kW) at 500Vac | Max. Rated I (A) | Motor Power (kW) at 500Vac |
| 1 | V50009B | 14 | 11 | 10 | 7,5 | 9 | 5,5 |
| | V50017B | 26 | 18,5 | 19 | 15 | 17 | 11 |
| | V50030B | 45 | 30 | 34 | 22 | 30 | 18,5 |
| | V50045B | 68 | 45 | 51 | 37 | 45 | 30 |
| | V50060B | 90 | 55 | 68 | 45 | 60 | 37 |
| | V50075B | 113 | 75 | 85 | 55 | 75 | 45 |
| | V50090B | 135 | 90 | 101 | 75 | 90 | 55 |
| 2 | V50110B | 165 | 110 | 140 | 90 | 110 | 75 |
| | V50145B | 218 | 150 | 164 | 110 | 145 | 90 |
| | V50170B | 255 | 185 | 192 | 132 | 170 | 110 |
| | V50210B | 315 | 220 | 237 | 185 | 210 | 150 |
| | V50250B | 375 | 250 | 281 | 200 | 250 | 185 |
| 3 | V50275B | 412 | 280 | 310 | 220 | 275 | 200 |
| | V50330B | 495 | 355 | 370 | 250 | 330 | 220 |
| | V50370B | 555 | 400 | 416 | 280 | 370 | 250 |
| | V50460B | 690 | 500 | 518 | 355 | 460 | 315 |
| 4 | V50580B | 870 | 560 | 650 | 450 | 580 | 400 |
| | V50650B | 975 | 630 | 731 | 500 | 650 | 450 |
| | V50800B | 1200 | 710 | 900 | 630 | 800 | 560 |

NOTE: Rated power and currents at 500VAC (-20% to +10%) for motors of 1500rpm

690Vac (-20% to +10%)

| FRAME | CODE | AC53b 3.0-30:330 | | AC53b 4.0-30:330 | | AC53b 4.5-30:330 | |
|-------|-----------|------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|
| | | Max. Rated I (A) | Motor Power (kW) at 690Vac | Max. Rated I (A) | Motor Power (kW) at 690Vac | Max. Rated I (A) | Motor Power (kW) at 690Vac |
| 1 | V50009.6B | 14 | 15 | 10 | 11 | 9 | 7,5 |
| | V50017.6B | 26 | 22 | 19 | 18,5 | 17 | 15 |
| | V50030.6B | 45 | 45 | 34 | 37 | 30 | 30 |
| | V50045.6B | 68 | 75 | 51 | 55 | 45 | 45 |
| | V50060.6B | 90 | 90 | 68 | 75 | 60 | 55 |
| | V50075.6B | 113 | 110 | 85 | 90 | 75 | 75 |
| | V50090.6B | 135 | 132 | 101 | 110 | 90 | 90 |
| 2 | V50110.6B | 165 | 150 | 140 | 132 | 110 | 110 |
| | V50145.6B | 218 | 200 | 164 | 150 | 145 | 132 |
| | V50170.6B | 255 | 250 | 192 | 200 | 170 | 150 |
| | V50210.6B | 315 | 315 | 237 | 220 | 210 | 200 |
| | V50250.6B | 375 | 355 | 281 | 250 | 250 | 220 |
| 3 | V50275.6B | 412 | 400 | 310 | 315 | 275 | 250 |
| | V50330.6B | 495 | 450 | 370 | 355 | 330 | 315 |
| | V50370.6B | 555 | 500 | 416 | 400 | 370 | 355 |
| | V50460.6B | 690 | 630 | 518 | 500 | 460 | 450 |
| 4 | V50580.6B | 870 | 800 | 650 | 630 | 580 | 560 |
| | V50650.6B | 975 | 900 | 731 | 710 | 650 | 630 |
| | V50800.6B | 1200 | 1000 | 900 | 900 | 800 | 800 |

NOTE: Rated power and currents at 690VAC (-20% to +10%) for motors of 1500rpm

08 V5 SERIES >accessories

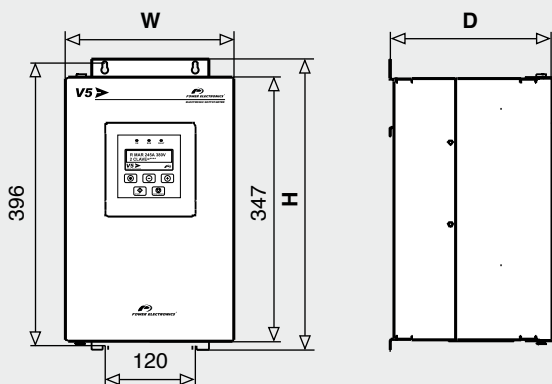


ACCESSORIES

| REFERENCE | DESCRIPTION |
|------------|--------------------------------------|
| I001 | PROFIBUS Communication module |
| A002 | DEVICENET Communication module |
| A003 | JOHNSON CONTROL Communication module |
| A005 | Ethernet Modbus |
| P0015(X3)* | Bypass Kit V50060-V50090 |
| P0016(X3)* | Bypass Kit V50110-V50250 |
| L051* | Bypass terminal 9-17A |
| L057* | Bypass terminal 30-45A |
| V01 | Display kit 2m extender with casing |
| V02 | Display kit 1m extender with casing |
| V09 | Display kit 3m extender with casing |
| V16 | Display kit 5m extender with casing |
| MFV50275 | DC braking module 275A |

(*) Accessories for external Bypass in standard V5 softstarter

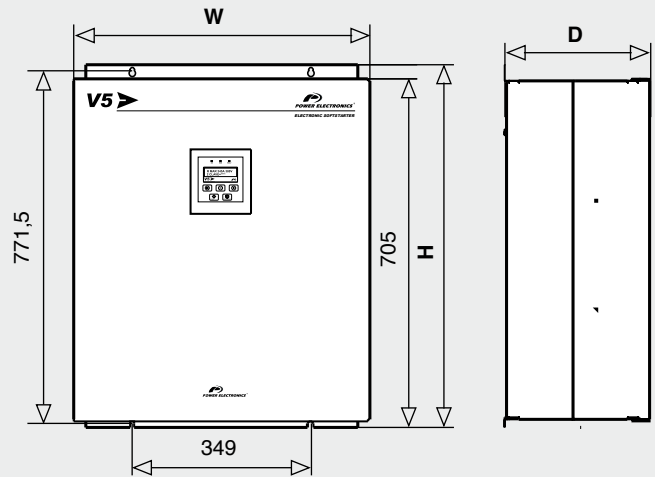
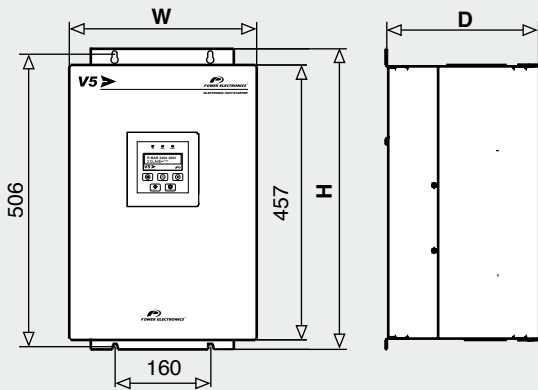
09 V5 SERIES >dimensions



FRAME 1

| REFERENCE | DIMENSIONS (mm) | | | WEIGHT (kg) |
|-----------------------|-----------------|-----|-----|-------------|
| | H | W | D | |
| V50009 - V50090 | 414 | 226 | 230 | 11,6 |
| V50009.6 - V50090.6 | 414 | 226 | 230 | 11,6 |
| V50009B - V50090B | 414 | 226 | 230 | 12,1 |
| V50009.6B - V50090.6B | 414 | 226 | 230 | 12,1 |

> dimensions

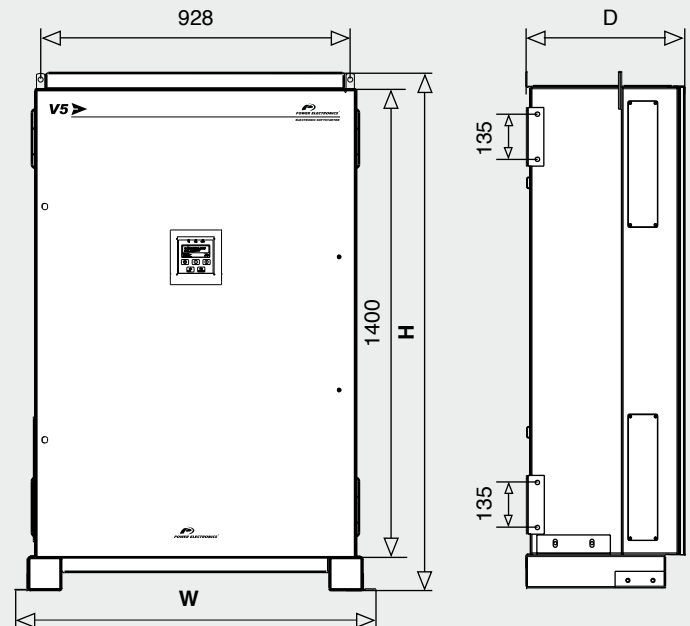
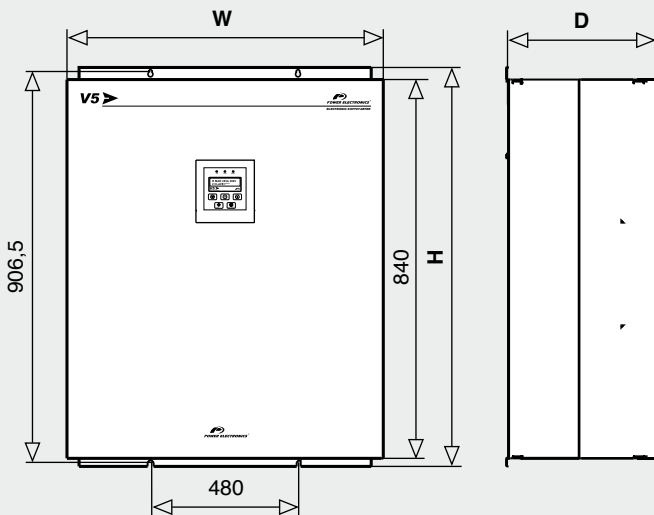


FRAME 2

| REFERENCE | DIMENSIONES (mm) | | | WEIGHT (kg) |
|-----------------------|------------------|-----|-----|-------------|
| | H | W | D | |
| V50110 - V50250 | 523 | 314 | 260 | 19 |
| V50110.6 - V50250.6 | 523 | 314 | 260 | 19 |
| V50110B - V50250B | 523 | 314 | 260 | 21 |
| V50110.6B - V50250.6B | 523 | 314 | 260 | 21 |

FRAME 3

| REFERENCE | DIMENSIONES (mm) | | | WEIGHT (kg) |
|-----------------------|------------------|-----|-----|-------------|
| | H | W | D | |
| V50275 - V50460 | 791 | 580 | 309 | 53,6 |
| V50275.6 - V50460.6 | 791 | 580 | 309 | 53,6 |
| V50275B - V50460B | 791 | 580 | 309 | 60,6 |
| V50275.6B - V50460.6B | 791 | 580 | 309 | 60,6 |



FRAME 4

| REFERENCE | DIMENSIONES (mm) | | | WEIGHT (kg) |
|-----------------------|------------------|-----|-----|-------------|
| | H | W | D | |
| V50580 - V51000 | 926 | 640 | 324 | 77,6 |
| V50580.6 - V51000.6 | 926 | 640 | 324 | 77,6 |
| V50580B - V50800B | 926 | 640 | 324 | 86,6 |
| V50580.6B - V50800.6B | 926 | 640 | 324 | 86,6 |

FRAME 5

| REFERENCE | DIMENSIONES (mm) | | | WEIGHT (kg) |
|---------------------|------------------|------|-----|-------------|
| | H | W | D | |
| V51200 - V51500 | 1552 | 1084 | 475 | 300,0 |
| V51200.6 - V51500.6 | 1552 | 1084 | 475 | 300,0 |



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