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# DC590+ Series

## DC Drives - Integrator Series



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# DC Drives - DC590+ Integrator Series 15 A - 1950 A

## Overview




### Description

The DC590+ Integrator Series DC drive is the latest development of the range which also includes the AC690+ AC drives. It benefits from 30 years experience of designing and manufacturing drives for process line control with dedicated function blocks which simplify the implementation of applications such as sectional drive reels, winder control etc. The function block capabilities offer unparralleled flexibility in both new installations and retrofit applications. A number of common fieldbus communications options enable connectivity to a wide range of popular control networks allowing the DC590+ to be integrated in larger control systems.

### Features

- **Ratings up to 1950 A and supply voltages to 690 V**
- **Internal controlled field supply**
  **Function blocks programming, including open and closed-loop winder control as standard**

### Standards

The DC590+ series meets the following standards when installed in accordance with the relevant product manual.
CE marked to EN50178 (Safety, Low Voltage Directive) EN61800-3 (EMC Directive) with integral filters. External supply capacitors are required up to 110 A for compliance.

- **Supply Voltage 220...500 V as standard**
- **CE marked**
- **UL and cUL approved up to 830 A**

### Technical Characteristics - Overview

| | |
|---|---|
| **Power configuration** | DC590+ 4 quadrant regenerative; 2 fully controlled 3 phase thyristor bridges<br>DC591+ 2 quadrant; 1 fully controlled 3 phase thyristor bridge |
| **Armature rating (ADC)** | Frame 1 15, 35 A<br>Frame 2 40, 70, 110, 165 A<br>Frame 3 180, 270 A<br>Frame 4 380, 500, 725, 830 A<br>Frame 6 1250, 1600, 1950 A |
| **Overload** | 15...270 A; 200 % for 10 s 150 % for 30 s - from 380 A: several overload choices are available |
| **Supply voltage (VAC) 50/60 Hz** | 220...500 V (±10 %) Frame 1...4<br>110...220 V (±10 %) Option Frame 1...4<br>500...600 V (±10 %) Option Frame 4<br>380...600 V (±10 %) Frame 6<br>380...690 V (±10 %) Frame 6 |
| **Field current max** | 4 A Frame 1<br>10 A Frame 2 and 3<br>30 A Frame 4 |
| **Field voltage max** | Vfield = VAC x 0.82 |
| **Operating Environment** | |
| **Operating temperature** | 0...45 °C (15...165 A)<br>0...35 °C (180...270 A)<br>0...40 °C (current ≥1200 A)<br>derate by 1 %/°C up to 55 °C max |
| **Altitude** | 500 m above sea level<br>Derate by 1 %/200 m above 500 m to 5000 m max |



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### Next Generation Technology

Building upon the highly successful DC590+ drive used in thousands of applications world-wide, the DC590+ Integrator drive takes DC motor control to the next level. With its state-of-the-art advanced 32-bit control architecture, the DC590+ drive delivers highly functional and flexible control suited to a whole host of industrial applications.

### Typical Applications

- **Converting machinery**
- **Plastics and rubber processing machinery**
- **Wire and cable**
- **Material handling systems**
- **Automotive**

### Function Block Programming

Function Block Programming is a tremendously flexible control structure that allows an almost infinite combination of user functions to be realised with ease. Each control function (an input, output, process PID for example) is represented as a software block that can be freely interconnected to all other blocks to provide any desired action.
The drive is despatched with the function blocks pre-configured as a standard DC drive so you can operate it straight from the box without further adjustments. Alternatively you can pick pre-defined Macros or even create your own control strategy, often alleviating the need for an external PLC and therefore reducing cost.

### Feedback Options

The DC590+ has a range of interface options which are compatible with the most common feedback devices enabling simple motor control through to the most sophisticated multi-motor system. Armature voltage feedback is standard without the need for any interface option.

- **Analogue tachogenerator**
- **Encoder**

### Interface Options

Designed with connectivity in mind, the DC590+ has a number of communications and I/O options that allow the drive to take control of the application, or be integrated into a larger system. When combined with function programming, custom functions and control can be easily created offering the user a highly flexible and versatile platform for DC motor control.

### Programming/ Operator Controls

Featuring an intuitive menu structure, the ergonomically designed operator panel allows quick and easy access to all parameters and functions of the drive via a bright, easy to read backlit display and tactile keypad. Additionally, it provides local control of start/stop, speed demand and rotation direction to greatly assist with machine commissioning.

- **Multi-Lingual alpha-numeric display**
- **Customised parameter values and legends**
- **On drive or remote mounting**
- **Local control of start/stop, speed and direction**
- **Quick set-up menu**

### Connectivity

Whatever the complexity of your control scheme, the DC590+ has the interface to suit. As standard there's enough analogue and digital I/O for the most complex applications. Alternatively, add the relevant "technology box" for immediate access to serial communications and Fieldbus networks. The DC590+ has been designed to fit seamlessly, and without compromise, into any control environment.

### Analogue/Digital Control

- 5 Analogue Inputs (12bit + sign)
- 3 Analogue Outputs
- 9 Digital Inputs
- 3 Digital Outputs

### Serial Communications and Fieldbus Options

- PROFIBUS
- CANopen
- Devicenet
- RS422 / RS485
- Ei Bisynch
- EtherNet




6901 Programming/ Operator Controls

## Features and Benefits

### Easy to use operator controls

- Detailed diagnostics
- Multi-language display

### Advanced autotuning

### Standard open fieldbuses



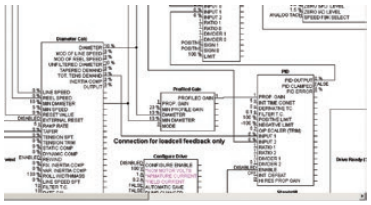
### Configurable input-output terminal blocks

- 5 analogue inputs
- 3 analogue outputs
- 9 digital inputs
- 3 digital outputs



### Macro function blocks

- Open-loop winder control
- Winder control - loadcell/dancer
- Section control
- Maths functions
- Embedded controller functions



### Worldwide product support

The DC590+ DC Drive is available with full application and service support in over fifty countries worldwide. So wherever you are, you can be confident of full back up and support.

### Rapid Commissioning, optimal control performance and easy maintenance

With its self-tuning algorithm, the DC590+ can be configured and commissioned within minutes, without turning the motor and without the need for high levels of engineering know-how
The operator interface allows easy monitoring of machine operation and simplifies maintenance.

### Easy integration into existing control networks

The DC590+ has a wide choice of common industry fieldbus communication options allowing seemless integration into existing factory control networks

### Interfacing with existing external control equipment (Dancer, gauge, etc…)

A number of input / output options gives the DC590+ the flexibility needed for integration into any variable speed system. Combined with its embedded automation functions, its input-output configurations can in many instances remove the need for an external PLC.

### Years of applications expertise at your service

The DC590+ macro function blocks are the result of over 30 years of experience gained by Parker SSD of installing drives in variable speed and sectional drive systems. This unique application experience is included in the drive in the form of dedicated function blocks at no extra cost, thereby reducing the design costs of your machinery.



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# Technical characteristics

## Electrical characteristics

| Voltage | Output current [A] | | Field current max [A] | Frame | Order code[1] |
|---|---|---|---|---|---|
| | Continuous 100 % without overload | Overload 150 % x 30 s 200 % x 10 s | | | |
| 110 V - 220 V | 15 | 15 | 4 | 1 | 590P-2321501... |
| | 35 | 35 | 4 | 1 | 590P-2323501... |
| | 40 | 40 | 10 | 2 | 590P-2324002... |
| | 70 | 70 | 10 | 2 | 590P-2327002... |
| | 110 | 110 | 10 | 2 | 590P-2331102... |
| | 165 | 165 | 10 | 2 | 590P-2331652... |
| | 180 | 180 | 10 | 3 | 590P-2331803... |
| | 270 | 270 | 10 | 3 | 590P-2332703... |
| | 420 | 380 | 30 | 4 | 590P-2333804... |
| | 550 | 500 | 30 | 4 | 590P-2335004... |
| | 800 | 725 | 30 | 4 | 590P-2337254... |
| | 910 | 830 | 30 | 4 | 590P-2338304... |
| 220 V - 500 V | 15 | 15 | 4 | 1 | 590P-5321501... |
| | 35 | 35 | 4 | 1 | 590P-5323501... |
| | 40 | 40 | 10 | 2 | 590P-5324002... |
| | 70 | 70 | 10 | 2 | 590P-5327002... |
| | 110 | 110 | 10 | 2 | 590P-5331102... |
| | 165 | 165 | 10 | 2 | 590P-5331652... |
| | 180 | 180 | 10 | 3 | 590P-5331803... |
| | 270 | 270 | 10 | 3 | 590P-5332703... |
| | 420 | 380 | 30 | 4 | 590P-5333804... |
| | 550 | 500 | 30 | 4 | 590P-5335004... |
| | 800 | 725 | 30 | 4 | 590P-5337254... |
| | 910 | 830 | 30 | 4 | 590P-5338304... |
| | 1350 | 1250 | 60 | 6 | 590P-5341256... |
| | 1750 | 1600 | 60 | 6 | 590P-5341606... |
| | 2150 | 1950 | 60 | 6 | 590P-5341956... |
| 500 V - 600 V | 420 | 380 | 30 | 4 | 590P-6333804... |
| | 550 | 500 | 30 | 4 | 590P-6335004... |
| | 800 | 725 | 30 | 4 | 590P-6337254... |
| | 910 | 830 | 30 | 4 | 590P-6338304... |
| 500 V - 690 V | 1350 | 1250 | 60 | 6 | 590P-7341256... |
| | 1750 | 1600 | 60 | 6 | 590P-7341606... |
| | 1950 | 1850 | 60 | 6 | 590P-7341956... |

(1) The references are for 4Q drives
For 2Q drives, replace "590P" for "591P"



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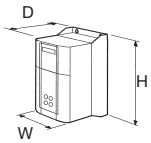
## Technical Data

| | |
|---|---|
| **Protection** | High energy MOV's<br>Heatsink overtemperature<br>Instantaneous overcurrent<br>Thyristor trigger failure<br>Inverse time overcurrent<br>Interline snubber network<br>Field Failure<br>Zero speed detection<br>Speed feedback failure<br>Stall protection<br>Motor overtemperature |
| **Inputs/Outputs** | |
| **Analogue inputs** | (5 Total - 1 x 12 bit plus sign,<br>4 x 10 bit plus sign)<br>1 - Speed demand setpoint (-10/0/+10 V)<br>4 - Configurable |
| **Analogue outputs** | (3 Total - 10 bit)<br>1 - Armature current output (-10/0/+10 V or 0-10 V)<br>2 - Configurable |
| **Dgital inputs** | (9 Total - 24 V, max 15 mA)<br>1 - Program stop<br>1 - Coast stop<br>1 - External stop<br>1 - Start/Run<br>5 - Configurable |
| **Digital outputs** | (3 Total - 24 V (max 30 V) 100 mA)<br>3 - Configurable |
| **Reference supplies** | 1 - +10 VDC<br>1 - -10 VDC<br>1 - +24 VDC |

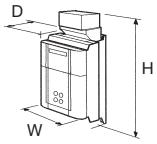


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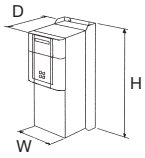
# Dimensions



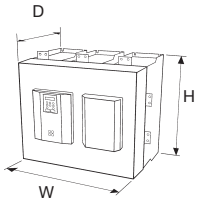
Frame 1/2



Frame 3



Frame 4



Frame 6

| Current [A] | Frame | Dimensions [mm] | | | Weight [kg] |
|---|---|---|---|---|---|
| | | W | H | D | |
| 15/35 | 1 | 200 | 375 | 220 | 6.4 |
| 40/165 | 2 | 200 | 434 | 292 | 10.5 |
| 180/270 | 3 | 250 | 485 | 234 | 20 |
| 380/500 | 4 | 253 | 700 | 358 | 32 |
| 725/830 | | | | | 44 |
| 1250/1950 | 6 2Q | 686 | 715 | 378 | 95 |
| | 6 4Q | | | | 110 |

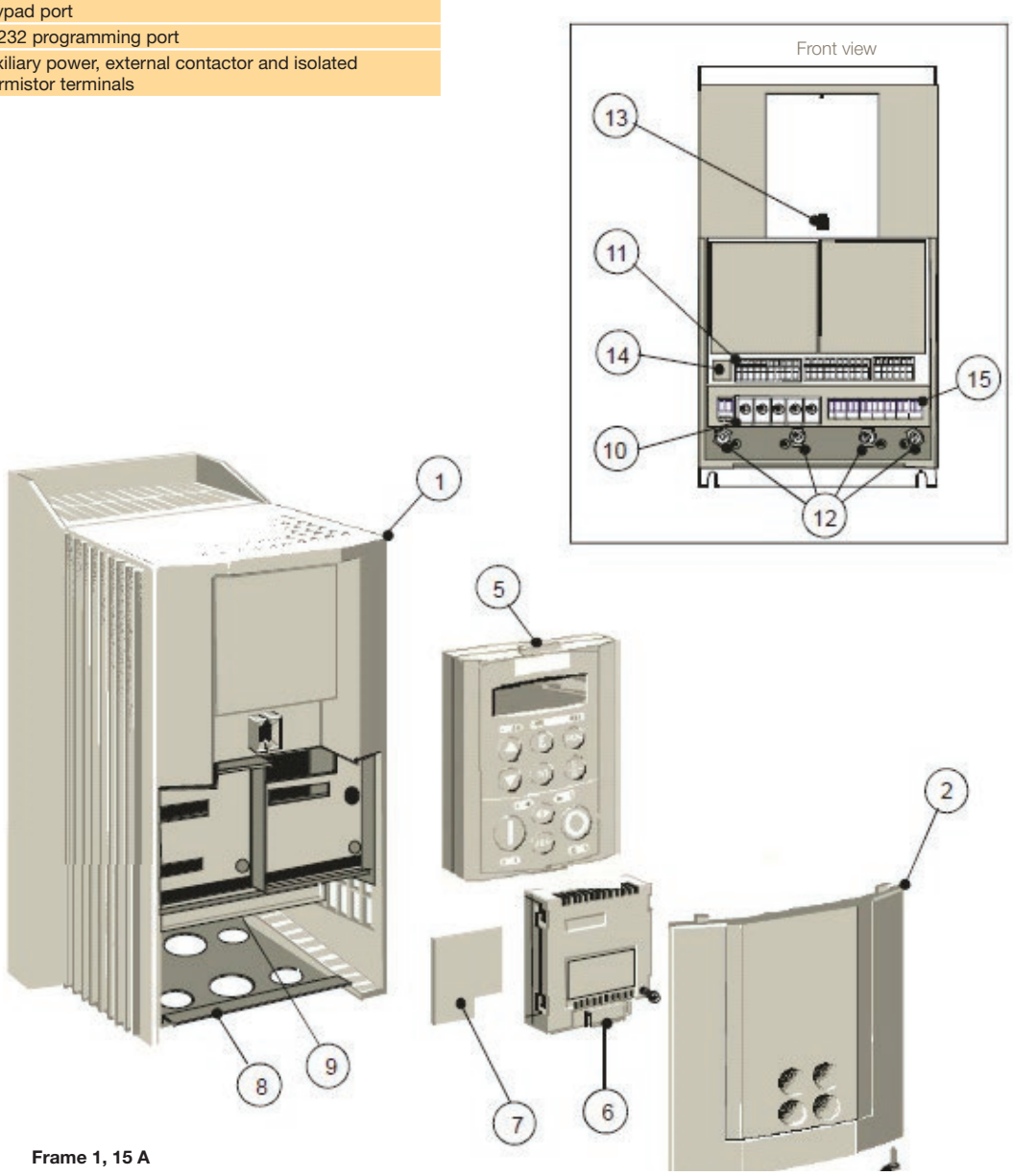


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## Overview of Frames 1 and 2

### Frames 1 and 2

| | |
|---|---|
| 1 | Main drive assembly |
| 2 | Terminal cover |
| 3 | Terminal cover retaining screws |
| 5 | 6901 keypad |
| 6 | COMMS technology box (optional) |
| 7 | Speed feedback technology card (optional) |
| 8 | Gland plate |
| 9 | Power terminal shield |
| 10 | Power terminals |
| 11 | Control terminals |
| 12 | Earthing points |
| 13 | Keypad port |
| 14 | RS232 programming port |
| 15 | Auxiliary power, external contactor and isolated thermistor terminals |

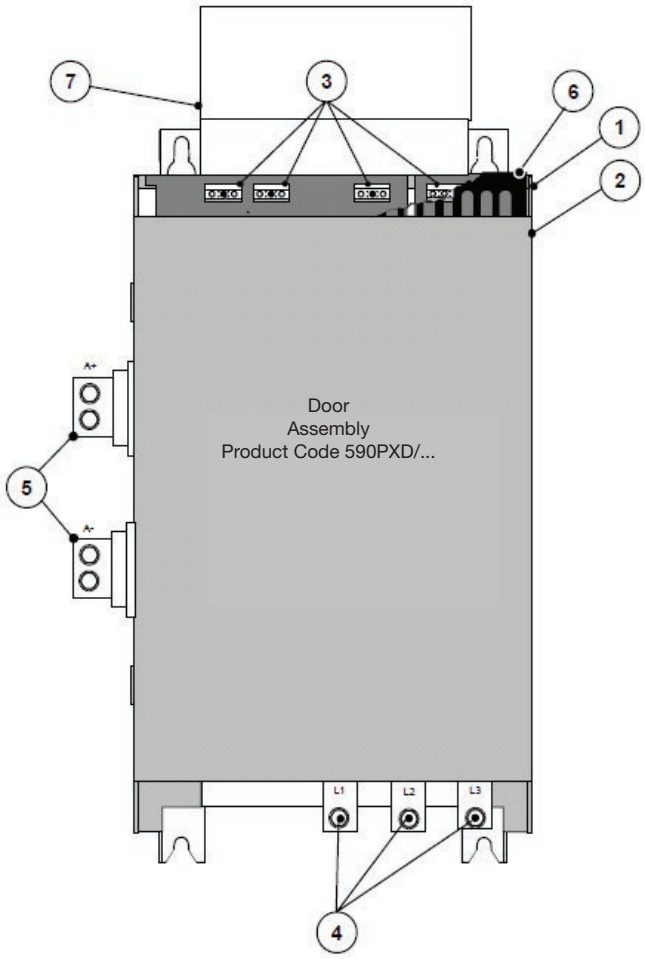



**Frame 1, 15 A**

## Overview of Frame 3

| | |
|---|---|
| 1 | Main drive assembly |
| 2 | Door assembly |
| 3 | Field wiring terminals |
| 4 | Busbars - main power input |
| 5 | Busbars - main power output |
| 6 | IP20 Top cover) |
| 7 | IP20 Fan housing (where fitted) |

Front view

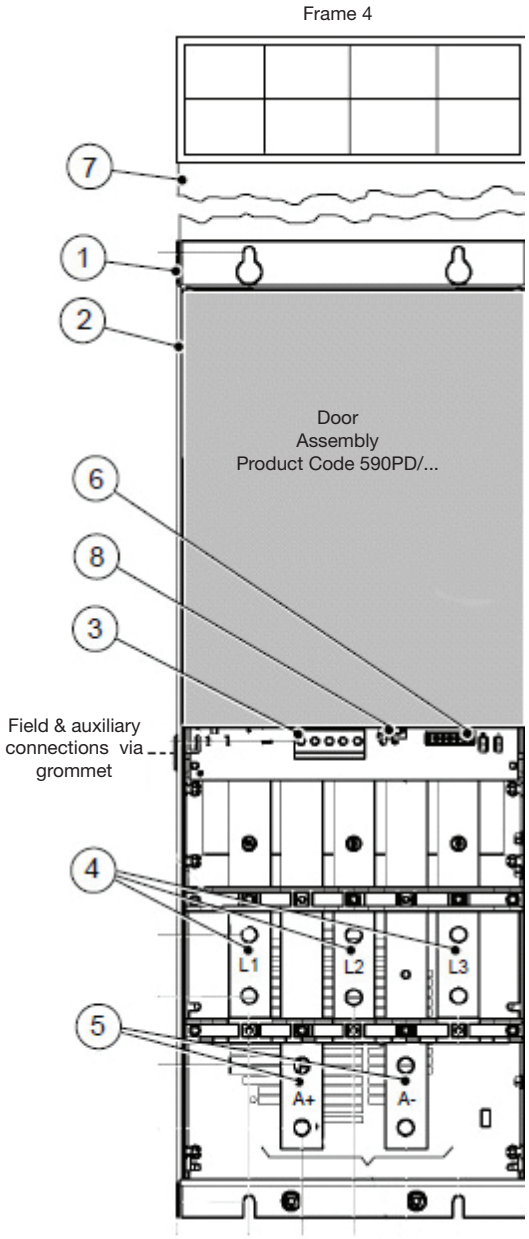



**270 A Unit**

## Overview of Frame 4

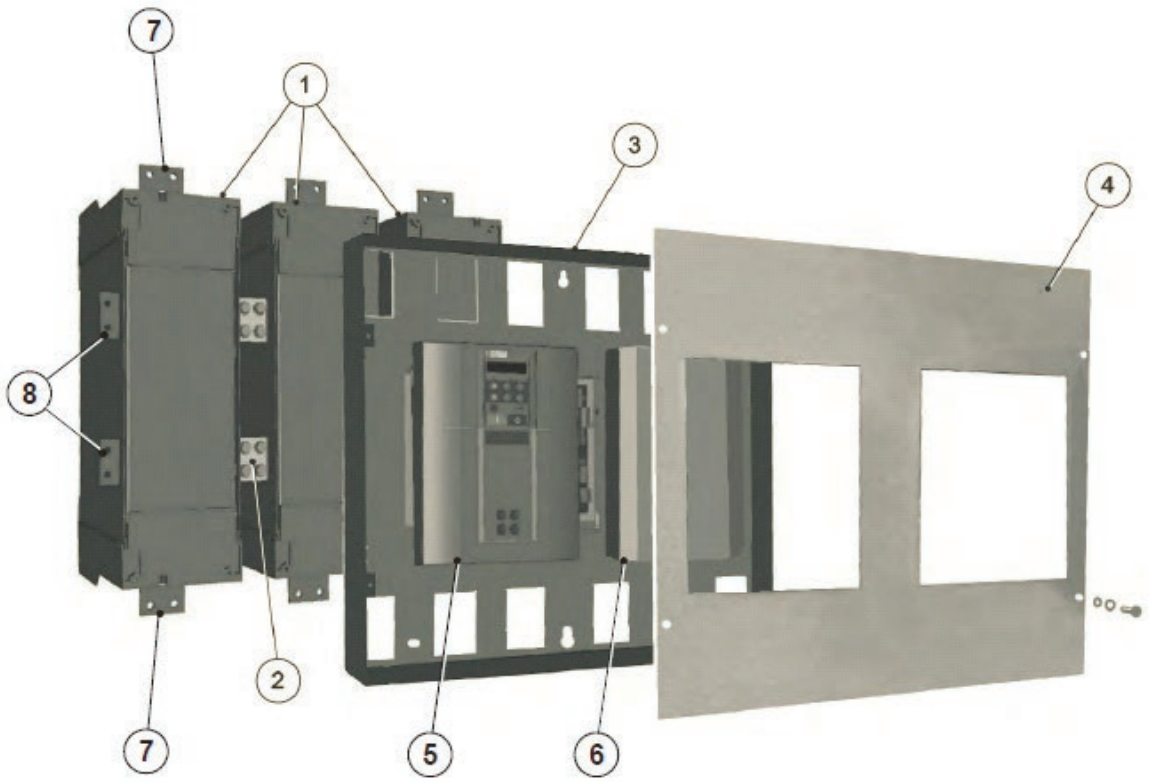
| | |
|---|---|
| 1 | Main drive assembly |
| 2 | Standard door assembly |
| 3 | Motor field terminals |
| 4 | Busbars - main power input |
| 5 | Busbars - main power output |
| 6 | Auxiliary supply, contactor and motor thermistor terminals |
| 7 | External vent (where fitted) |
| 8 | Contactor control select |

Frame 4



### Overview of Frame 6

| | |
|---|---|
| 1 | Phase assemblies - L1, L2, L3 |
| 2 | Fishplate |
| 3 | Control panel assembly |
| 4 | Front cover |
| 5 | Standard door assembly |
| 6 | Field controller |
| 7 | Busbars - main power input |
| 8 | Busbars - main power output |



# External Stack Controller - DC598+, DC599+ Series

## The economical solution for retrofit applications

When upgrading machines equipped with older high power DC drives, the most cost-effective and quickest way is often to reuse the existing thyristor power stack, which in most cases will be in perfect working order.
To preserve your investment, Parker SSD Drives has developed a DC598+ / DC599+ power stack controller offer specially aimed at retrofit applications and based on the DC590+ controller.
Available in 2 versions, the DC599+ two quadrant non-regenerative and DC598+ four quadrant full-regenrative versions, can be used to drive the power stacks of existing DC drives manufactured by Parker SSD or other manufacturers, delivering the benefits of the recent technological innovations of the DC590+ Series drive.
The DC598+ and DC599+ offer the ability to upgrade your equipment quickly and easily and integrates with your existing control equipment or SCADA package.
The DC598+ and DC599+ retrofit solutions are recommended for currents above 800 A.



## Benefits

- Reuse existing DC power stacks
- Connectivity over standard common fieldbuses (Including PROFIBUS, EtherNet, DeviceNet, CANopen)
- Easy to use operator interface
- Flexible common Integrator Series programming environment

## The DC598/9+ provides the following:

- Thyristor firing signals
- Thyristor firing pulse transformers
- AC current transformer feedback rectification and scaling
- Armature voltage feedback interface
- Coding and phase rotation interface
- Mains present monitoring
- Heatsink over-temperature input
- Field power modules and input/output terminals
- Field current monitoring and scaling
- All standard DC590+ I/O terminals

## Technical Characteristics

| | |
|---|---|
| **Supply Voltage** | 110...240 VAC ±10 %<br>220...500 VAC ±10 %<br>380...690 VAC ±10 %<br>3 ph coding or 1 ph power |
| **Supply Frequency** | 50/60 Hz ±10 % |
| **Output Field Current** | 60 ADC naturally cooled - 120 ADC force cooled (1 x Field Current DC value) Amps 1 ph. AC Nominal 3 ph AC |
| **Field Output Voltage** | (0.9 x 1 ph Supply Voltage) VDC |
| **Total Losses** | (3 x idc out) Watts. |
| **Auxiliary Supply** | 110...240 VAC ±10 % 1 ph - Naturally cooled<br>110...120 VAC ±10 % 1 ph - Force cooled 115 V fan<br>220...240 VAC ±10 % 1ph - Force cooled 230 V fan |
| **Auxiliary Supply Current** | SMPS Quiescent Current = 500 mA 115 VAC or 250 mA 230 VAC ie 50 VA.<br>Fan current - 270 mA @115 VAC or 135 mA @230 VAC |
| **Auxiliary Supply Fuse** | 3 A |

| | |
|---|---|
| **Operating Temp.** | 0...+45 °C |
| **Storage Temp.** | -25...+55 °C |
| **Shipping Temp.** | -25...+70 °C |
| **Enclosure Rating** | IP20 |
| **Altitude Rating** | Maximum Altitude 500 m<br>De-rate the output at 1 % per 200 m |
| **Humidity** | Maximum 85 % relative humidity at 45 % non-condensing |
| **Atmosphere** | Non flammable, non-corrosive and dust free |
| **Climatic** | Class 3k3 as defined by EN60721-3-3 (1995) |



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# Accessories and Options

## Overview

| Options | Fitting | Order Reference |
|---|---|---|
| **Operator Keypad** | | |
| DC590+ keypad (removable) | Option | 6901-00-G |
| Remote mounting kit | | 6052/00 |
| **Communication Cards** | | |
| EtherNet Modbus/TCP and EtherNet IP | Option | 6055-ENET-00 |
| LINKnet | | 6055-LNET-00 |
| DeviceNet | | 6055-DNET-00 |
| RS485 / Modbus | | 6055-EI00-00 |
| PROFIBUS-DP | | 6055-PROF-00 |
| CANopen DS402 | | 6055-CAN-00 |
| **Speed Feedback Cards** | | |
| Wire-ended encoder Card | Option | AH387775U001-1 |
| Analogue Tacho | | AH500935U001-1 |
| **Drive Doors / Accessories** | | |
| Door for Frame 3 | Standard | 590PXD-0010-UK |
| Door for Frame 4 | | 590PD-0010-UK |
| Frame 4 ventilation kit | Option | LA466717U001-1 |



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## Communication Cards

The communication cards allow the DC590+ to be connected to the most common industry standard fieldbuses.

## Features

- Dimensions HxWxD:
  127 mmx76.2 mmx25.4 mm
- LED indication of network and card status

| Ethernet Communications Interface | |
|---|---|
| *Order Code: 6055-ENET-00 | |
| Supported Protocols | Modbus/TCP and Ethernet IP |
| Communication Speed | 10/100 M bits/s |
| Station Address | Selectable via switch or Internet Explorer |
| Suitable for | AC690+ version 4.7+<br>DC590+ version 7.1+ |

| RS485/Modbus Communications Interface | |
|---|---|
| *Order Code: 6055-EI00-00 | |
| Supported Protocols | Modbus RTU, EI Bisynch ASCII |
| Cabling | RS485 2 or 4 wire |
| Communication Speed | 300 to 115200 bits/s |
| Station Address | Selectable via Software |
| Suitable for | AC690+ version 4.7+<br>DC590+ version 5.17+ |

| Devicenet Communications Interface | |
|---|---|
| *Order Code: 6055-DNET-00 | |
| Supported Protocols | DeviceNet Drive Profile Drive – Group 2 slave only |
| Station Address | DeviceNet Drive Profile Drive – Group 2 slave only |
| Suitable for Drives | AC690+<br>DC590+ version 5.x+ |

| Profibus-DP Communications Interface | |
|---|---|
| *Order Code: 6055-PROF-00 | |
| Supported Protocols | Profibus-DP |
| Communication Speed | Automatically Detected |
| Station Address | Selectable via Software |
| Suitable for | AC690+ version 1.x+<br>DC590+ version 5.x+ |

| CANopen Communications Interface | |
|---|---|
| *Order Code: 6055-CAN-00 | |
| Profile | DS402 |
| Supported Messages | SDO, PDO, NMT, SYNC |
| Communication Speed | 20 K, 50 K, 125 K, 250 K, 500 K, 1M bits/s selectable |
| Station Address | Selectable via Switch |
| Suitable for | AC690+<br>DC590+ version 5.x+ |

| LINKnet Communications Interface | |
|---|---|
| *Order Code: 6055-LNET-00 | |
| Supported Protocols | Modbus/TCP and Ethernet IP |
| Communication Speed | 10/100 M bits/s |
| Station Address | Selectable |
| Suitable for | AC690+<br>DC590+ version 5.x+ |



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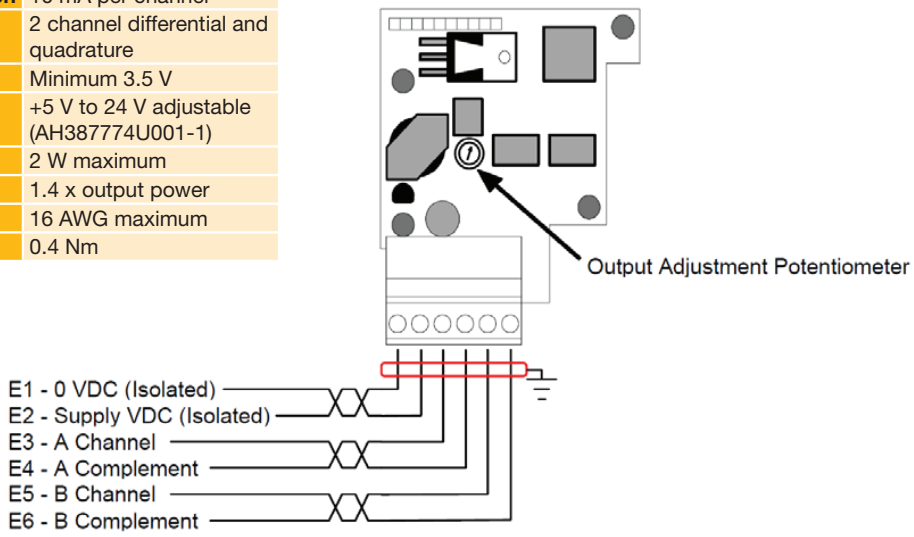
## Encoder Feedback Option Card

### Description

The encoder feedback card allows an incremental encoder to be fitted to the drive to provide accurate measurement of motor speed. The card also provides the encoder power supply.

## Specifications

| | |
|---|---|
| **Maximum input frequency** | 100 kHz |
| **Receiver current consumption** | 10 mA per channel |
| **Input format** | 2 channel differential and quadrature |
| **Differential input voltage** | Minimum 3.5 V |
| **Encoder output voltage** | +5 V to 24 V adjustable (AH387774U001-1) |
| **Power supply rating** | 2 W maximum |
| **Power supply load** | 1.4 x output power |
| **Terminal size** | 16 AWG maximum |
| **Tightening torque** | 0.4 Nm |



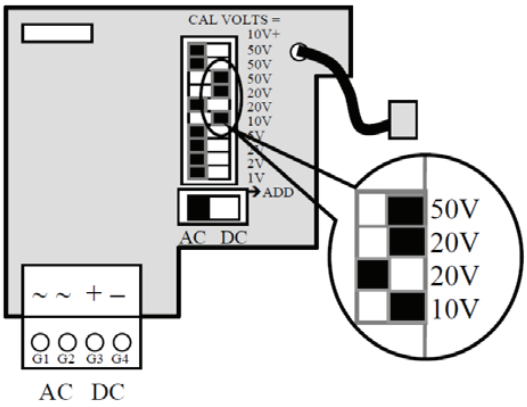

## Analogue Tacho Feedback Option Card

### Description

The analogue tacho feedback card allows the connection of either an AC or DC tachogenerator to provide a measurement of motor speed to improve motor control. Switches for calibration allow for quick and easy setup.

## Specifications

| | |
|---|---|
| **Tachogenenerator type** | AC/DC |
| **Calibration range** | 10-200V |




## Order Codes

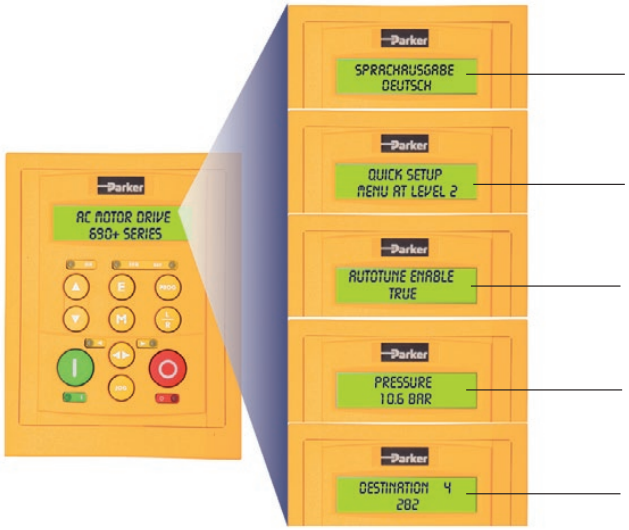
| Order Code | Description |
|---|---|
| **AH387775U001-1** | Encoder Card - Adjustable supply |
| **AH500935U001-1** | Tacho Feedback Card |

## Operator Keypads

**Standard operator keypad 6901-00-G**

**Features**

- Local motor control: start, speed, direction, diagnostics
- Operator menus and parameter configuration
- Quick setup menu
- Password protection for parameter configuration




**Multilingual**
English · French · German · Italian
Portuguese · Swedish · Polish

**Quick setup menu**
Intuitive menus allowing easy and quick setup of the drive

**Auto-tuning**
Automatic tuning of motor parameters ensures maximum dynamic motor performance

**Diagnostics messages**
Display input and output parameters as well as drive operating units

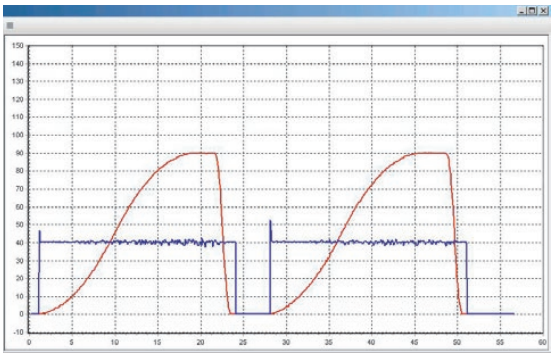
**Drive configuration**

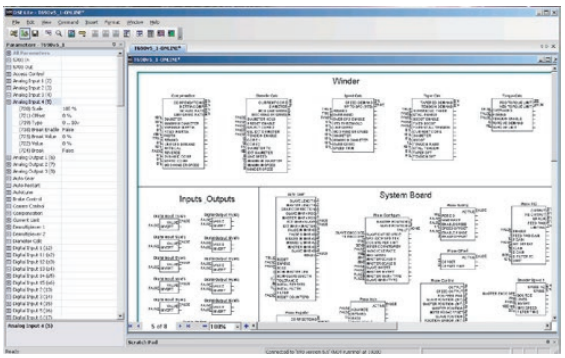
## Drive System Explorer Lite (DSE Lite) Software

**Description**

DSE LITE software is an easy to use configuration, commissioning and monitoring tool with graphical interface for the Parker SSD Drives range of AC and DC drives.
While the drive is in running mode the oscilloscope function allows "on-line'" monitoring of selected parameters and the recording of trends.

DSE LITE, allows the user to create, parameterize and configure user defined applications thanks to function blocks dedicated to speed control, Winder, PID, Diameter calculator, Shaftless...
DSE LITE is downloadable from our website. www.parker.com





# Order Codes

## DC590+ Integrator Series, 110 V...500 V 3 phase

| | 1 | | 2 | 3 | 4 | | 5 | 6 | | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Order example | **590P** | **-** | **23** | **21501** | **0** | **-** | **P** | **00** | **-** | **U** | **4** | **V** | **0** |

| 1 | **Product Family** | |
|---|---|---|
| | **590P** | DC590+ Series DC Digital Drive - 4 quadrant regenerative |
| | **591P** | DC591+ Series DC Digital Drive - 2 quadrant non-regenerative |

| 2 | **Supply Voltage** | |
|---|---|---|
| | **23** | 110...220 V 3 phase |
| | **53** | 220...500 V 3 phase |

| 3 | **Current / Power Rating @110...220 VAC 3 ph** | | |
|---|---|---|---|
| | | Output current [A] | Frame |
| | **21501** | 15 | 1 |
| | **23501** | 35 | 1 |
| | **24002** | 40 | 2 |
| | **27002** | 70 | 2 |
| | **31102** | 110 | 2 |
| | **31652** | 165 | 2 |
| | **31803** | 180 | 3 |
| | **32703** | 270 | 3 |
| | **33804** | 380 | 4 |
| | **35004** | 500 | 4 |
| | **37254** | 725 | 4 |
| | **38304** | 830 | 4 |

| 3 | **Current / Power Rating @220...500 VAC 3 ph** | | |
|---|---|---|---|
| | | Output current [A] | Frame |
| | **21501** | 15 | 1 |
| | **23501** | 35 | 1 |
| | **24002** | 40 | 2 |
| | **27002** | 70 | 2 |
| | **31102** | 110 | 2 |
| | **31652** | 165 | 2 |
| | **31803** | 180 | 3 |
| | **32703** | 270 | 3 |
| | **33804** | 380 | 4 |
| | **35004** | 500 | 4 |
| | **37254** | 725 | 4 |
| | **38304** | 830 | 4 |
| | **41256** | 1250 | 6 |
| | **41606** | 1600 | 6 |
| | **41956** | 1950 | 6 |

| 4 | **Auxiliary Supply** | |
|---|---|---|
| | **0** | Universal 115 V...230 V 1 ph (Frames 1, 2, 6) |
| | **1** | 115 V 1 ph (Frames 3,4) |
| | **2** | 230 V 1 ph (Frames 3,4) |

| 5 | **Mounting** | |
|---|---|---|
| | **P** | Panel mounting (1) |

| 6 | **Special Options** | |
|---|---|---|
| | **00** | None |
| | | Documented special options (refer to local sales office) |

| 7 | **Languages** | |
|---|---|---|
| | **U** | English (50/60 Hz) (2) |

| 8 | **Keypad** | |
|---|---|---|
| | **4** | 6901 keypad fitted |

| 9 | **Speed Feedback** | |
|---|---|---|
| | **V** | Armature voltage (3) |

| 10 | **Communications** | |
|---|---|---|
| | **0** | None (4) |

(1) Frame 4 ventilation duct kit sold as separate part LA466717U001-1.
(2) Product sold with English as standard. Additional languages can be selected by the user on the 6901 keypad at product commissioning. German, French, Italian and Spanish.
(3) Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
(4) Product supplied without communications options fitted. Options sold separately.



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## DC590+ Integrator Series 500 V...690 V 3 phase

| | 1 | | 2 | 3 | 4 | | 5 | 6 | | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Order example | **590P** | **-** | **63** | **33804** | **2** | **-** | **P** | **00** | **-** | **U** | **4** | **V** | **0** |

| | | |
|---|---|---|
| **1** | **Product Family** | |
| | **590P** | DC590+ Series DC Digital Drive - 4 quadrant regenerative |
| | **591P** | DC591+ Series DC Digital Drive - 2 quadrant non-regenerative |
| **2** | **Supply voltage** | |
| | **63** | 500...600 V 3 ph |
| | **73** | 500...690 V 3 ph |
| **3** | **Current / Power Rating @500-600 V 3 ph** | |
| | | Output current [A] / Frame |
| | **33804** | 380 / 4 |
| | **35004** | 500 / 4 |
| | **37254** | 725 / 4 |
| | **38304** | 830 / 4 |
| **3** | **Current / Power Rating @500-690 V 3 ph** | |
| | | Output current [A] / Frame |
| | **41256** | 1250 / 6 |
| | **41606** | 1600 / 6 |
| | **41956** | 1950 / 6 |
| **4** | **Auxiliary Supply** | |
| | **0** | Universal 115 V...230 V 1ph (Frames 1, 2, 6) |
| | **1** | 115 V 1 ph (Frames 3...4) |
| | **2** | 230 V 1 ph (Frames 3...4) |

| | | |
|---|---|---|
| **5** | **Mounting** | |
| | **P** | Panel mounting (1) |
| **6** | **Special Options** | |
| | **00** | None |
| | | Documented special options (01...99) (refer to local sales office) |
| **7** | **Languages** | |
| | **U** | English (50/60 Hz) (2) |
| **8** | **Keypad** | |
| | **4** | 6901 keypad fitted |
| **9** | **Speed Feedback** | |
| | **V** | Armature voltage (3) |
| **10** | **Communications** | |
| | **0** | None (4) |

(1) Frame 4 ventilation duct kit sold as separate part LA466717U001-1.
(2) Product sold with English as standard. Additional languages can be selected by the user on the 6901 keypad at product commissioning. German, French, Italian and Spanish.
(3) Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
(4) Product supplied without communications options fitted. Options sold separately.



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## DC590+ Series External Stack Controllers

| | 1 | | 2 | 3 | 4 | | 5 | 6 | 7 | | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Order example | **598P** | **-** | **23** | **26001** | **0** | **-** | **A** | **P** | **00** | **-** | **U** | **4** | **V** | **0** |

| | | |
|---|---|---|
| **1** | **Product family** | |
| | **598P** | DC598+ External Stack Controller - 2Q non-regenerative |
| | **599P** | DC599+ External Stack Controller - 4Q Regenerative |
| **2** | **Supply voltage** | |
| | **23** | 110...220 V 3 ph |
| | **53** | 220...500 V 3 ph |
| | **73** | 500...690 V 3 ph |
| **3** | **Current / Power Ratings @110...220 V 3 ph** | |
| | | Output current [A] / Frame Size |
| | **26001** | 60 / 1 |
| | **31201** | 120 / 1 |
| **4** | **Auxiliary Supply** | |
| | **0** | Universal 115 V...230 V 1 ph (60 Amp rating only) |
| | **1** | 115 V 1 ph (120 Amp rating only) |
| | **2** | 230 V 1 ph (120 Amp rating only) |
| **5** | **Trigger Option** | |
| | **A** | Amplifiers |
| | **T** | Trigger (23 and 53 supplies only) |
| **6** | **Mounting** | |
| | **P** | Panel mounting (1) |
| **7** | **Special Options** | |
| | **00** | None |
| | | Documented special options (01...99) (refer to local sales office) |
| **8** | **Languages** | |
| | **U** | English (50/60 Hz) (2) |
| **9** | **Keypad** | |
| | **4** | 6901 keypad installed |
| **10** | **Speed Feedback** | |
| | **V** | Armature voltage (3) |
| **11** | **Communications** | |
| | **0** | None (4) |

(1) Frame 4 ventilation duct kit sold as separate part LA466717U001-1.
(2) Product sold with English as standard. Additional languages can be selected by the user on the 6901 keypad at product commissioning. German, French, Italian and Spanish.
(3) Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
(4) Product supplied without communications options fitted. Options sold separately.



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