DC590+ Series
DC Drives - Integrator Series
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DC590+ Series

DC Drives - Integrator Series - DC590+ Series 15 A...2700 A

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Parker Hannifin

The global leader in motion and control technologies

A world class player on a local stage

Global Product Design
Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

Local Application Expertise
Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers’ needs.

Manufacturing to Meet Our Customers’ Needs
Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker’s manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers’ expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

Electromechanical Worldwide Manufacturing Locations

Europe
Littlehampton, United Kingdom
Dijon, France
Offenburg, Germany
Filderstadt, Germany
Milan, Italy

Asia
Wuxi, China
Chennai, India

North America
Rohnert Park, California
Irwin, Pennsylvania
Charlotte, North Carolina
New Ulm, Minnesota

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Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

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Variable Speed 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 unparalleled 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.
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 an cUL approved up to 830 A

For customers wanting to upgrade from the earlier DC590C analog DC drive, wishing to benefit from the extra functionality and capability of the DC590P, a DC590PX variant is available which enables the new DC590P control section to be used with an existing DC590C power stack. This has the same form factor and terminal arrangements as the earlier DC590C product.

Technical Characteristics - Overview

<table>
<thead>
<tr>
<th>Power configuration</th>
<th>DC590+ 4 quadrant regenerative; 2 fully controlled 3 phase thyristor bridges DC591+ 2 quadrant; 1 fully controlled 3 phase thyristor bridge</th>
</tr>
</thead>
</table>
| Armature rating (ADC)                | Frame 1  15, 35 A  
Frame 2  40, 70, 110, 165 A  
Frame 3  180, 270 A  
Frame 4  380, 500, 725, 830 A  
Frame 6  1250, 1600, 1950 A |
| Overload                             | 15...450 A; 200 % for 10 s 150 % for 30 s - from 700 A: several overload choices are available |
| Supply voltage (VAC)  50/60 Hz       | 220...500 V (±10 %) Frame 1...4  
110...220 V (±10 %) Option Frame 1...4  
500...600 V (±10 %) Option Frame 4  
380...600 V (±10 %) Frame 6  
380...690 V (±10 %) Frame 6 |
| Field current max                    | 4 A Frame 1  
10 A Frame 2 and 3  
30 A Frame 4 |
| Field voltage max                    | Vfield = VAC x 0.82 |
| Operating Environment                | 0...45 °C (15...165 A)  
0...35 °C (180...270 A)  
0...40 °C (current ≥1200 A) derate by 1%/°C up to 55 °C max |
| Altitude                             | 500 m above sea level  
Derate by 1%/200 m above 500 m to 5000 m max |
DC Drives - Integrator Series - DC590+ Series

Overview

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

Serial Communications and Fieldbus Options
- PROFIBUS
- CANopen
- Lonworks
- Devicenet
- EtherNet
- RS422/RS485
- Modbus
- ControlNet

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

Function Block Programming
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

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

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 seamless 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.

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.
## Technical characteristics

### Electrical characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Output current [A]</th>
<th>Field current max [A]</th>
<th>Frame</th>
<th>Order code¹</th>
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<tbody>
<tr>
<td></td>
<td>Continuous 100 %</td>
<td>Overload</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>without overload</td>
<td>150 % x 30 s</td>
<td>200 % x 10 s</td>
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<tr>
<td><strong>110 V - 220 V</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>110</td>
<td>15</td>
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<td>4</td>
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<td>550</td>
<td>500</td>
<td>30</td>
<td>4</td>
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<tr>
<td></td>
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<td>4</td>
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<td></td>
<td>910</td>
<td>830</td>
<td>30</td>
<td>4</td>
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<tr>
<td><strong>220 V - 500 V</strong></td>
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<td>60</td>
<td>6</td>
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<td></td>
<td>2150</td>
<td>1950</td>
<td>60</td>
<td>6</td>
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<td><strong>500 V - 600 V</strong></td>
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<td></td>
<td></td>
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<td>500</td>
<td>420</td>
<td>380</td>
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<td>910</td>
<td>830</td>
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<td>4</td>
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<td>1350</td>
<td>1250</td>
<td>60</td>
<td>6</td>
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<tr>
<td></td>
<td>1750</td>
<td>1600</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1950</td>
<td>1850</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td><strong>500 V - 690 V</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>420</td>
<td>380</td>
<td>30</td>
<td>4</td>
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<td>1750</td>
<td>1600</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1950</td>
<td>1850</td>
<td>60</td>
<td>6</td>
</tr>
</tbody>
</table>

¹ The references are for 4Q drives
For 2Q drives, replace “590P” for “591P”
## Technical Data

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

<table>
<thead>
<tr>
<th>Current [A]</th>
<th>Frame</th>
<th>Dimensions [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>W</td>
<td>H</td>
</tr>
<tr>
<td>15/35</td>
<td>1</td>
<td>200</td>
<td>375</td>
</tr>
<tr>
<td>40/165</td>
<td>2</td>
<td>200</td>
<td>434</td>
</tr>
<tr>
<td>180/270</td>
<td>3</td>
<td>250</td>
<td>485</td>
</tr>
<tr>
<td>380/500</td>
<td>4</td>
<td>253</td>
<td>700</td>
</tr>
<tr>
<td>725/830</td>
<td>6 Q</td>
<td>686</td>
<td>715</td>
</tr>
<tr>
<td>1250/1950</td>
<td>6 2Q</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 4Q</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Overview of Frames**

**Frames 1 and 2**

1. Main drive assembly
2. Terminal cover
3. Terminal cover retaining screws
4. Blank cover
5. 6901 keypad (optional)
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
### Overview of Frame 3

<table>
<thead>
<tr>
<th></th>
<th>Component</th>
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<tbody>
<tr>
<td>1</td>
<td>Main drive assembly</td>
</tr>
<tr>
<td>2</td>
<td>Door assembly</td>
</tr>
<tr>
<td>3</td>
<td>Field wiring terminals</td>
</tr>
<tr>
<td>4</td>
<td>Busbars - main power input</td>
</tr>
<tr>
<td>5</td>
<td>Busbars - main power output</td>
</tr>
<tr>
<td>6</td>
<td>IP20 Top cover</td>
</tr>
<tr>
<td>7</td>
<td>IP20 Fan housing (where fitted)</td>
</tr>
</tbody>
</table>

![Diagram of DC Drives - Integrator Series - DC590+ Series Overview of Frames](image-url)

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Door Assembly  
Product Code 590PXD/...
### Overview of Frame 4

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main drive assembly</td>
</tr>
<tr>
<td>2</td>
<td>Standard door assembly</td>
</tr>
<tr>
<td>3</td>
<td>Motor field terminals</td>
</tr>
<tr>
<td>4</td>
<td>Busbars - main power input</td>
</tr>
<tr>
<td>5</td>
<td>Busbars - main power output</td>
</tr>
<tr>
<td>6</td>
<td>Auxiliary supply, contactor and motor thermistor terminals</td>
</tr>
<tr>
<td>7</td>
<td>External vent (where fitted)</td>
</tr>
<tr>
<td>8</td>
<td>Contactor control select</td>
</tr>
</tbody>
</table>

[Diagram of Frame 4 showing field and auxiliary connections via grommet]
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-regenerative 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Supply Voltage</td>
<td>110...240 VAC ±10 %</td>
</tr>
<tr>
<td></td>
<td>220...500 VAC ±10 %</td>
</tr>
<tr>
<td></td>
<td>380...690 VAC ±10 %</td>
</tr>
<tr>
<td></td>
<td>3 ph coding or 1 ph power</td>
</tr>
<tr>
<td>Supply Frequency</td>
<td>50/60 Hz ±10 %</td>
</tr>
<tr>
<td>Output Field Current</td>
<td>60 ADC naturally cooled - 120 ADC force cooled</td>
</tr>
<tr>
<td></td>
<td>(1 x Field Current DC value) Amps 1 ph. AC</td>
</tr>
<tr>
<td></td>
<td>Nominal 3 ph AC</td>
</tr>
<tr>
<td>Field Output Voltage</td>
<td>(0.9 x 1 ph Supply Voltage) VDC</td>
</tr>
<tr>
<td>Total Losses</td>
<td>(3 x idc out) Watts.</td>
</tr>
<tr>
<td>Auxiliary Supply</td>
<td>110...240 VAC ±10 % naturally cooled</td>
</tr>
<tr>
<td></td>
<td>110...120 VAC ±10 % force cooled 115 V fan</td>
</tr>
<tr>
<td></td>
<td>220...240 VAC ±10 % force cooled 230 V fan</td>
</tr>
<tr>
<td>Auxiliary Supply Current</td>
<td>SMPS Quiescent Current = 500 mA 115 VAC or</td>
</tr>
<tr>
<td></td>
<td>250 mA 230 VAC ie 50 VA</td>
</tr>
<tr>
<td></td>
<td>Fan current - 270 mA @115 VAC or 135 mA @230 VAC</td>
</tr>
<tr>
<td>Auxiliary Supply Fuse</td>
<td>3 A</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>0...+45 °C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-25...+55 °C</td>
</tr>
<tr>
<td>Shipping Temp.</td>
<td>-25...+70 °C</td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>IP20</td>
</tr>
<tr>
<td>Altitude Rating</td>
<td>Maximum Altitude 500 m</td>
</tr>
<tr>
<td></td>
<td>De-rate the output at 1 % per 200 m</td>
</tr>
<tr>
<td>Humidity</td>
<td>Maximum 85 % relative humidity at 45 % non-condensing</td>
</tr>
<tr>
<td>Atmosphere</td>
<td>Non flammable, non-corrosive and dust free</td>
</tr>
<tr>
<td>Climatic</td>
<td>Class 3k3 as defined by EN60721-3-3 (1995)</td>
</tr>
</tbody>
</table>
## Accessories and Options

### Overview

<table>
<thead>
<tr>
<th>Options</th>
<th>Fitting</th>
<th>Order Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operator Keypad</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC590+ keypad (removable)</td>
<td>Option</td>
<td>6901-00-G</td>
</tr>
<tr>
<td>Advanced operator keypad (removable)</td>
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<td>6911-01-00-G</td>
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<td>Keypad blank cover (use when keypad not fitted)</td>
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<td>LA500326U001</td>
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<tr>
<td>Remote mounting kit</td>
<td></td>
<td>6052/00</td>
</tr>
<tr>
<td><strong>Communication Cards</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EtherNet Modbus/TCP and EtherNet IP</td>
<td></td>
<td>6055-ETH-00</td>
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<tr>
<td>LINKnet</td>
<td>Option</td>
<td>6055-LNET-00</td>
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<tr>
<td>DeviceNet</td>
<td></td>
<td>6055-DNET-00</td>
</tr>
<tr>
<td>RS485 / Modbus</td>
<td></td>
<td>6055-EI00-00</td>
</tr>
<tr>
<td>PROFIBUS-DP</td>
<td></td>
<td>6055-PROF-00</td>
</tr>
<tr>
<td>CANopen DS402</td>
<td></td>
<td>6055-CAN-00</td>
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<tr>
<td><strong>Speed Feedback Cards</strong></td>
<td></td>
<td></td>
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<tr>
<td>Wire-ended encoder Card</td>
<td>Option</td>
<td>AH387775U001</td>
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<tr>
<td>Analogue Tacho</td>
<td></td>
<td>AH500935U001</td>
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<tr>
<td><strong>Drive Doors / Accessories</strong></td>
<td></td>
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<tr>
<td>Door for Frame 3</td>
<td>Standard</td>
<td>590PXD-0010-UK</td>
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<tr>
<td>Door for Frame 4</td>
<td></td>
<td>590PD-0010-UK</td>
</tr>
<tr>
<td>Frame 4 ventilation kit</td>
<td>Option</td>
<td>LA466717U001</td>
</tr>
</tbody>
</table>
Communication Cards

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

**EtherNet Communications Interface**
- **Order Code:** 6055-ETH-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:** DC590+ version 7.1+

**DeviceNet Communications Interface**
- **Order Code:** 6055-DNET-00
- **Supported Protocols:** DeviceNet Drive Profile – Group 2 slave only
- **Station Address:** DeviceNet Drive Profile – Group 2 slave only
- **Suitable for:** 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, 1 M bits/s selectable
- **Station Address:** Selectable via Switch
- **Suitable for:** 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:** DC590+ version 5.x+

**RS485/Modbus Communications Interface**
- **Order Code:** 6055-EI-00
- **Supported Protocols:** Modbus RTU, EI Bisynch ASCII
- **Cabling:** RS485 2 or 4 wire
- **Communication Speed:** 300 to 115 200 bits/s
- **Station Address:** Selectable via software
- **Suitable for:** DC590+ version 5.17+

**Features**
- Communication cards can be factory fitted or purchased separately for fitting on-site
- Dimensions HxWxD: 127 mm x 76.2 mm x 25.4 mm
- LED indication of network and card status
Encoder feedback 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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Maximum input frequency</td>
<td>100 kHz</td>
</tr>
<tr>
<td>Receiver current consumption</td>
<td>10 mA per channel</td>
</tr>
<tr>
<td>Input format</td>
<td>2 channel differential and quadrature</td>
</tr>
<tr>
<td>Differential input voltage</td>
<td>Minimum 3.5 V</td>
</tr>
<tr>
<td>Encoder power output</td>
<td>+5 V to 24 V adjustable (AH387775U001)</td>
</tr>
<tr>
<td>Power supply rating</td>
<td>2 W maximum</td>
</tr>
<tr>
<td>Power supply load</td>
<td>1.4 x output power</td>
</tr>
<tr>
<td>Terminal size</td>
<td>16 AWG maximum</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>0.4 Nm</td>
</tr>
</tbody>
</table>

Order Codes

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH387775U001</td>
<td>Encoder Card - Adjustable supply</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Order example</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Codes</td>
<td>590P</td>
<td>23</td>
<td>21501</td>
<td>0</td>
<td>P</td>
<td>00</td>
<td>U</td>
<td>4</td>
<td>V</td>
<td>0</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Output current [A]</th>
<th>Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>21501</td>
<td>15</td>
</tr>
<tr>
<td>23501</td>
<td>35</td>
</tr>
<tr>
<td>24002</td>
<td>40</td>
</tr>
<tr>
<td>27002</td>
<td>70</td>
</tr>
<tr>
<td>31102</td>
<td>110</td>
</tr>
<tr>
<td>31652</td>
<td>165</td>
</tr>
<tr>
<td>31803</td>
<td>180</td>
</tr>
<tr>
<td>32703</td>
<td>270</td>
</tr>
<tr>
<td>33804</td>
<td>380</td>
</tr>
<tr>
<td>35004</td>
<td>500</td>
</tr>
<tr>
<td>37254</td>
<td>725</td>
</tr>
<tr>
<td>38304</td>
<td>830</td>
</tr>
</tbody>
</table>

### 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 (3)

### 9 Speed Feedback
- **V** Armature voltage (4)

### 10 Communications
- **0** None (5)

1. Frame 4 ventilation duct kit sold as separate part LA466717U001.
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. 6901 keypad included with standard product. This can be removed and replaced with blanking cover part number LA500326U001.
4. Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
5. Product supplied without communications options fitted. Options sold separately.
## DC590+ Integrator Series  500 V...690 V 3 phase

<table>
<thead>
<tr>
<th>Order example</th>
<th>Product Family</th>
<th>Supply voltage</th>
<th>Current / Power Rating @500-600 V 3 ph</th>
<th>Current / Power Rating @500-690 V 3 ph</th>
<th>Auxiliary Supply</th>
<th>Mounting</th>
<th>Special Options</th>
<th>Languages</th>
<th>Keypad</th>
<th>Speed Feedback</th>
<th>Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>590P</td>
<td>DC590+ Series DC Digital Drive - 4 quadrant regenerative</td>
<td>63</td>
<td>500...600 V 3 ph</td>
<td>380</td>
<td>4</td>
<td>P</td>
<td>00</td>
<td>U</td>
<td>4</td>
<td>V</td>
<td>0</td>
</tr>
<tr>
<td>591P</td>
<td>DC591+ Series DC Digital Drive - 2 quadrant non-regenerative</td>
<td>73</td>
<td>500...690 V 3 ph</td>
<td>383</td>
<td>4</td>
<td>6901 keypad fitted</td>
<td>(01...99)</td>
<td>English (50/60 Hz)</td>
<td>6901 keypad fitted</td>
<td>Armature voltage</td>
<td>None</td>
</tr>
</tbody>
</table>

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

4. **Current / Power Rating @500-690 V 3 ph**
   - Output current [A] | Frame
   - 41256 | 1250 | 6
   - 41606 | 1600 | 6
   - 41956 | 1950 | 6

5. **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)

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 fitted (3)

10. **Speed Feedback**
    - V: Armature voltage (4)

11. **Communications**
    - 0: None (5)

---

(1) Frame 4 ventilation duct kit sold as separate part LA466717U001.
(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) 6901 keypad included with standard product. This can be removed and replaced with blanking cover part number LA500326U001.
(4) Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
(5) Product supplied without communications options fitted. Options sold separately.
## DC590PX+ Integrator Series

| Order example | 590PX - 23 23501 0 - P 00 - U 4 V 0 |

### 1 Product family
- **590PX** DC590PX Series DC Digital Drive - regenerative
- **591PX** DC591PX Series DC Digital Drive - non-regenerative

### 2 Supply voltage
<table>
<thead>
<tr>
<th>110...220 V 3 ph</th>
<th>220...500 V 3 ph</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>53</td>
</tr>
</tbody>
</table>

### 3 Current / Power Ratings @110...220 V 3 ph

<table>
<thead>
<tr>
<th>Output current [A]</th>
<th>Frame Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>23501</td>
<td>35</td>
</tr>
<tr>
<td>27001</td>
<td>70</td>
</tr>
<tr>
<td>31101</td>
<td>110</td>
</tr>
<tr>
<td>31501</td>
<td>150</td>
</tr>
</tbody>
</table>

### 3 Current / Power Ratings @220...500 V 3 ph

<table>
<thead>
<tr>
<th>Output current [A]</th>
<th>Frame Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>23501</td>
<td>35</td>
</tr>
<tr>
<td>27001</td>
<td>70</td>
</tr>
<tr>
<td>31101</td>
<td>110</td>
</tr>
<tr>
<td>31501</td>
<td>150</td>
</tr>
</tbody>
</table>

### 4 Auxiliary Supply
- **0** Universal 115 V...230 V 1 ph (35/70 Amp ratings only)
- **1** 115 V 1 ph (110/150 Amp ratings only)
- **2** 230 V 1 ph (10/150 Amp ratings only)

### 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 installed (3)

### 9 Speed Feedback
- **V** Armature voltage (4)

### 10 Communications
- **0** None (5)

1. Frame 4 ventilation duct kit sold as separate part LA466717U001.
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. 6901 keypad included with standard product. This can be removed and replaced with blanking cover part number LA500326U001.
4. Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
5. Product supplied without communications options fitted. Options sold separately.
## DC590+ Series External Stack Controllers

<table>
<thead>
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<th>Order example</th>
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<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
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<td>Product family</td>
<td>598P</td>
<td>DC598+ External Stack Controller - 2Q non-regenerative</td>
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<tr>
<td></td>
<td>599P</td>
<td>DC599+ External Stack Controller - 4Q Regenerative</td>
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<td>53</td>
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</tr>
<tr>
<td></td>
<td>73</td>
<td>500...690 V 3 ph</td>
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<tr>
<td>Current / Power Ratings @110...220 V 3 ph</td>
<td>26001</td>
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<td>31201</td>
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<tr>
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<td>31201</td>
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</tr>
<tr>
<td>Current / Power Ratings @500...690 V 3 ph</td>
<td>26001</td>
<td>60</td>
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</tr>
<tr>
<td></td>
<td>31201</td>
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<td></td>
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</tr>
<tr>
<td>Auxiliary Supply</td>
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<td>Universal 115 V...230 V 1 ph (60 Amp rating only)</td>
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<td></td>
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<tr>
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<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>230 V 1 ph (120 Amp rating only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>P</td>
<td>Panel mounting (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Languages</td>
<td>U</td>
<td>English (50/60 Hz) (2)</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keypad</td>
<td>4</td>
<td>6901 keypad installed (3)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Feedback</td>
<td>V</td>
<td>Armature voltage (4)</td>
<td></td>
<td></td>
<td></td>
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<td>Communications</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Frame 4 ventilation duct kit sold as separate part LA466717U001.
(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) 6901 keypad included with standard product. This can be removed and replaced with blanking cover part number LA500326U001.
(4) Product supplied without feedback option fitted (armature voltage control). Encoder and tacho feedback options sold separately.
(5) Product supplied without communications options fitted. Options sold separately.
At Parker, we’re guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 0800 27 27 5374

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- Agriculture
- Manufacturing
- Construction & materials handling
- Marine
- Oil & gas
- Renewable energy
- Transportation

Key Products
- Check valves
- Cross valves
- Constructions for low pressure
- Ball component
- Cartridge valves
- Diaphragm valves
- Manual valves
- PTFE hose & tubing
- Quick couplings
- Rubber & thermoplastic hose
- Hose fittings & adapters
- Tubing & panels fittings

Hydraulics
Key Markets
- Aerospace
- Agriculture
- Manufacturing
- Construction & materials handling
- Marine
- Oil & gas
- Renewable energy
- Transportation

Key Products
- Accumulators
- Cartridge valves
- Diaphragm valves
- Manual valves
- PTFE hose & tubing
- Quick couplings
- Rubber & thermoplastic hose
- Hose fittings & adapters
- Tubing & panels fittings

Pneumatics
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Air preparation
- Signal filters & valves
- Manifolds
- Pneumatic actuators
- Pneumatic units & components
- Pneumatic valves
- Quick connectors
- Nylon actuators
- Rubber & thermoplastic hose & fittings
- Gaskets & seals
- Thermoplastic tubing & fittings
- Vacuum generation, air & sensor

Climate Control
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Air conditioning
- Condensation equipment
- Fluid & lubrication
- Industrial machinery
- Life science
- Oil & gas
- Precision cooling
- Process cooling
- Refrigeration

Electro-mechanical
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Aerospace
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Air conditioning
- Condensation equipment
- Fluid & lubrication
- Industrial machinery
- Life science
- Oil & gas
- Precision cooling
- Process cooling
- Refrigeration

Process Control
Key Markets
- Alternative fuels
- Biotechnology
- Chemicals & petrochemicals
- Chemical & industrial
- Electric power systems
- Food & beverage
- Life sciences
- Oil & gas
- Renewable energy
- Systems & assembly

Key Products
- Analytical & precision conditioning products & systems
- Chemical injection
- Flowmeters & sensors
- Flowmeters & sensors
- Fluid power systems
- Humidification & dehumidification
- Integrated hydraulic circuits
- Process valves & controls
- Vacuum generation, air & sensors

Electrical
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Filtration
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Air filters & sterilizers
- Biological & medical
- Chemical & industrial
- Chemical & industrial
- Food & beverage
- Life science
- Oil & gas
- Renewable energy
- Systems & assembly

Steering & Shifting
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Gearboxes & final drives
- Electric & hybrid powertrains
- Linear motion & assembly
- Linear motion & assembly
- Materials & process equipment
- Systems & assembly

Packaging machinery
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Biotechnology
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Life science
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Food & beverage
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions

Materials & process equipment
Key Markets
- Aerospace
- Automotive & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & aerospace

Key Products
- Advanced actuators
- CO2 controls
- Electric control systems
- Electro-mechanical actuators
- Hydraulic power systems
- Linear motion
- Stepper motors, servo valves, servo systems
- Structural extrusions
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