INSIGHTqc™ Controller
**Simply Insightful**

When trying to achieve simple manufacturing goals in a complex manufacturing world, taking control of and understanding the fastening process doesn’t have to be complicated. The new Ingersoll Rand® INSIGHTqc™ is different, by design. The INSIGHTqc™ controller is designed to be easy to use, easy to integrate, and provide a common platform to meet the global assembly needs of our customers. This controller offers advanced tightening control and a simple user experience to improve efficiency on production lines, and get the job done right, every time.

The web-based software eliminates device dependencies and enables full programming capability with any device that can run an Internet browser, including smart phones, tablets or computers. The INSIGHTqc™ controller is easy to integrate with the manufacturing line, provides flexible logic controls for job sequencing, and helps reduce line rebalancing costs through a simple and intuitive user interface.

*Bottom line, the INSIGHTqc™ controller is a Simply Insightful solution.*
### Capabilities

<table>
<thead>
<tr>
<th>Software Capability</th>
<th>Standard</th>
<th>F</th>
<th>M</th>
<th>FM</th>
<th>Standard</th>
<th>F</th>
<th>M</th>
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### Statistical Process Controls

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<tr>
<td>Mean</td>
<td>Statistical average - used to derive the central tendency of the tightening data of a particular PSET</td>
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<tr>
<td>Capability</td>
<td>Calculated as ((6 \cdot \sigma / \text{Mean}) \cdot 100) on a particular PSET</td>
</tr>
<tr>
<td>Pass %</td>
<td>Indicates the % of the cycles that have a cycle result of PASS from the sample population of a particular PSET</td>
</tr>
<tr>
<td>Fail %</td>
<td>Indicates the % of the cycles that have a cycle result of FAIL from the sample population of a particular PSET</td>
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<td>Mean Shift</td>
<td>Calculated as: (</td>
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<tr>
<td>Range</td>
<td>Calculated as: (</td>
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<tr>
<td>Standard Deviation ((\sigma))</td>
<td>The calculated standard deviation ((\sigma)) of the Result Value of a particular PSET.</td>
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<td>PP</td>
<td>Process Performance, calculated as: (</td>
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<tr>
<td>CAM</td>
<td>Calculated as: (</td>
</tr>
<tr>
<td>PPK</td>
<td>Process Performance Index, Calculated as: (</td>
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Specifications

- Integrated Wall Mount
- SSD Card
- Whiteboard and QR Code
- Integrated Carrying Handle
- Power Indicator
- 7-In Full Color Touch Screen
- System Indicators:
  - Factory Connection
  - Wireless Connection (future)
  - Link Status
  - Fault Detected
- Ethernet Ports 10/100 & 10/100/1G
- USB 2.0 Ports (4)
- IP Reset Button
- Power On/Off Switch
- Power Entry Module
- Warning Label
- Tool Connector
- GFI/20 Amp Circuit Breaker
- GFI Test Button
- Fieldbus Card Slot
- 6 Position Connector:
  1. +24V
  2. 24VCOM
  3. E-Stop
  4. E-Stop COM
  5. High Speed Stop
  6. High Speed Stop COM
## Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Weight (Kg/lbs)</td>
<td>(5.6) 12.3</td>
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<tr>
<td>Volume (dm³)</td>
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<td>Color Touchscreen</td>
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<td>Hot Swap Tools</td>
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<td>Boot Time (seconds)</td>
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<td>Voltage / Current Requirement</td>
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<td>Onboard Circuit Breaker</td>
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<td>Integrated E-Stop</td>
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## Software

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<td>Number of PSEIIs</td>
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<td>Logic Rules for JOB Sequencing</td>
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<td>Barcode function: USB, Serial, Ethernet</td>
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<td>Manual Barcode Entry Option</td>
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<td>Tubenut Controls (Configurable modes)</td>
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<td>Number of Configurable User Logins</td>
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<td>Quick Programming Mode</td>
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<tr>
<td>Advanced Programming Mode</td>
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<tr>
<td>Unrestricted programming function from controller screen</td>
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<tr>
<td>Unrestricted remote programming from any device via any authorized browser</td>
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<tr>
<td>Embedded, Context-Specific Help</td>
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<td>Email Statistics Alarms Direct From Controller*</td>
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<td>Email Preventative Maintenance Alarms Direct from Controller*</td>
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<td>Multi-language Support</td>
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<td>Onboard Tool Diagnostics</td>
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*Requires proper authorization and network settings by plant IT Administrator for each controller

## Onboard Data Storage

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Removeable SSD Card that stores ALL settings and data</td>
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<td>Complete controller settings and data recovery through SSD swap</td>
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<td>Tightening Results</td>
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<td>Tightening Curve</td>
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<td>Full USB Backup and Restore Function</td>
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</table>

## Connectivity

### Fieldbus Options
- Ethernet IP, Profinet, Profinet, DeviceNet

### MES Protocol Options
- Atlas Copco Open Protocol, Atlas Copco Toolsnet, VW XML 2.1, Nissan Serial EOR, IR Ethernet EOR

## Supported Languages
- English, French, German, Italian, Spanish, Czech, Russian, Portuguese, Simplified Chinese
Controller Models

The INSIGHTqc™ Controller is 100% compatible with our QE and QM tools. With the INSIGHTqc™, these tools will have 50K tightening records and 50K tightening traces – compared to 10 to 30K in competitors’ products – which will let users understand all facets of the tightening process – torque, angle, time and date.

<table>
<thead>
<tr>
<th>Model</th>
<th>Series</th>
<th>Display</th>
<th>Power</th>
<th>Hardware</th>
<th>Ethernet/P</th>
<th>ProfiNet</th>
<th>ProfIBUS</th>
<th>DeviceNET</th>
<th>IR Ethernet EOR</th>
<th>Atlas Copco Open Protocol</th>
<th>ToolsNet</th>
<th>VW XML 2.1</th>
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<tbody>
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DC Electric Nutrunners

QE2 Series DC electric nutrunners

QE 2 T S 010 P 11 S04

QE Series DC electric nutrunners

QE 4 A T 013 P A2 S04

Controller Models

The INSIGHTqc™ Controller is 100% compatible with our QE and QM tools. With the INSIGHTqc™, these tools will have 50K tightening records and 50K tightening traces – compared to 10 to 30K in competitors’ products – which will let users understand all facets of the tightening process – torque, angle, time and date.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Activation</th>
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</tr>
<tr>
<td>QE 4</td>
<td>A T 013 P A2 S04</td>
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Controller Models

The INSIGHTqc™ Controller is 100% compatible with our QE and QM tools. With the INSIGHTqc™, these tools will have 50K tightening records and 50K tightening traces – compared to 10 to 30K in competitors’ products – which will let users understand all facets of the tightening process – torque, angle, time and date.

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</table>
System Accessories

The INSIGHTqc™ Controller provides optimal flexibility for the workstation with compatibility to a variety of plug n play accessories to maximize productivity for your manufacturing line. A variety of cables and extension cables are available to customize your production setup.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Order Number</th>
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</thead>
<tbody>
<tr>
<td>QC-SKTR</td>
<td>Socket Tray, 4 Position</td>
<td>47615828001</td>
</tr>
<tr>
<td>QC-TL-4</td>
<td>USB Tower Light</td>
<td>47601629001</td>
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<tr>
<td>QC-ADPT-1</td>
<td>Serial Interface Adaptor</td>
<td>47601630001</td>
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<tr>
<td>QC-DIO-8CH</td>
<td>Digital I/O Box, 8 Channel</td>
<td>47617332001</td>
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<td>QC-BC-SCAN-1</td>
<td>Bar Code Scanner, Cabled USB; HD</td>
<td>47625754001</td>
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<tr>
<td>QC-BC-SCAN-2</td>
<td>Bar Code Scanner, Cabled USB; LD</td>
<td>47625755001</td>
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<td>QC-DIO-366-K</td>
<td>DIO Box Mounting Bracket Kit</td>
<td>47628739001</td>
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Tool Cables

<table>
<thead>
<tr>
<th>DC Tool Cables</th>
<th>(3m)</th>
<th>(6m)</th>
<th>(10m)</th>
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</thead>
<tbody>
<tr>
<td>Tool Cable (QE2)</td>
<td>CPS2-CORD-3M</td>
<td>CPS2-CORD-6M</td>
<td>CPS2-CORD-10M</td>
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<tr>
<td>90 tool cable (qe2)</td>
<td>-</td>
<td>CPS2-CORD-6M-90</td>
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<tr>
<td>Tool cable (qm, qe4/6/8)</td>
<td>GEA40-CORD-3M</td>
<td>GEA40-CORD-6M</td>
<td>GEA40-CORD-10M</td>
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<tr>
<td>90 cool cable (qm, qe4/6/8)</td>
<td>GEA40-CORD-3M-90</td>
<td>GEA50-CORD-6M-90</td>
<td>GEA40-CORDX-10-90</td>
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<table>
<thead>
<tr>
<th>DC Tool Extension Cables</th>
<th>(10m)</th>
<th>(20m)</th>
<th>(40m)</th>
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<tbody>
<tr>
<td>Extension cable</td>
<td>GEA40-EXT-10M</td>
<td>GEA40-EXT-20M</td>
<td>GEA40-EXT-40M</td>
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</tbody>
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<table>
<thead>
<tr>
<th>(50&quot;)</th>
<th>936</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 extension cable***</td>
<td>GEA40-INT-01</td>
</tr>
</tbody>
</table>

*** 90 degree extension cable requires a tool cable. Other lengths available.
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