Power absorbed by each spindle is measured and controlled independently: the 2, 3, or 4 spindles of the machine can be mechanically interconnected or completely independent. Each spindle can use a similar or a different type of spindle motor.

Machining centers and special machines with 2, 3, and 4 spindles

WattPilote Dual, Triple and Quad are tool wear and breakage monitoring systems especially designed for 2, 3, or 4-spindle machines: machining centers and special machines.

For dependent or independent spindle machines

Power absorbed by each spindle is measured and controlled independently: the 2, 3, or 4 spindles of the machine can be mechanically interconnected or completely independent. Each spindle can use a similar or a different type of spindle motor.

Monitor critical machining operations

Machining centers and special machines with 2, 3, or 4 spindles are increasingly used to improve production rates. To monitor the most critical operations on these types of machines, WattPilote Dual, Triple or Quad has two, three or four independent power channels for measurement and control: tool wear and breakage monitoring is as simple, reliable, and accurate as it is on single-spindle machines.

WattPilote Dual ensures production quality, reduces manufacturing cost and avoids producing scrap on any 2-spindle machining center or special machine.

WattPilote Triple is the most efficient solution to monitor wear and tool breakage on 3-spindle machining centers and special machines.

WattPilote Quad is ideal to monitor tools on any machining centers and special machines with 4-spindles, designed for the production of parts in large volume.

Compact, installation within the electrical cabinet

WattPilote Dual, Triple and Quad have independent wear and breakage monitoring systems in the same box, only the wiring with the PLC is in common, so the system is compact and easy to install.

WattPilote memorizes the last 65,000 machining reports (date, time, control mode, and fault), the last 30 machining curves, and the last 30 fault curves for each spindle.

Power data curves that are easy to understand

WattPilote memorizes the last 65,000 machining reports (date, time, control mode, and fault), the last 30 machining curves, and the last 30 fault curves for each spindle.

WattPilote Quad is ideal to monitor tools on any machining centers and special machines with 4-spindles, designed for the production of parts in large volume.

Diagnostic and supervision functions available on numeric controls

The Visu-CN-C software is an effective diagnostic and supervision tool. It is a user-friendly software package that can be loaded directly onto PC-compatible numeric controls. The operator can display machining cycles, tool wear condition, and fault curves. He can modify the control tolerances, and acknowledge faults and tool changes.
**Evolution Model range**

### General characteristics

**Evolution**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max number of different machining cycles</td>
<td>2 x 120</td>
</tr>
<tr>
<td>Minimum machining cycle time</td>
<td>0.07 sec.</td>
</tr>
<tr>
<td>Maximum machining cycle time</td>
<td>50 minutes</td>
</tr>
<tr>
<td>Reaction speed</td>
<td>0.005 sec.</td>
</tr>
<tr>
<td>Saved machining cycle curves</td>
<td>2 x last 30</td>
</tr>
<tr>
<td>Saved faults</td>
<td>2 x last 30</td>
</tr>
<tr>
<td>Saved wear rate</td>
<td>2 x last 65,000</td>
</tr>
<tr>
<td>Power, derivative, energy control</td>
<td>Simultaneous</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>0.01 %</td>
</tr>
</tbody>
</table>

### Technical characteristics

**Dual**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>24 VDC ± 10%, 0.9 A</td>
</tr>
<tr>
<td>PLC Protocol - Fieldbus</td>
<td>Profinet IO-RT</td>
</tr>
<tr>
<td></td>
<td>Profinet-DP I/O Slave</td>
</tr>
<tr>
<td></td>
<td>DeviceNet Slave</td>
</tr>
<tr>
<td></td>
<td>Ethernet/IP</td>
</tr>
<tr>
<td></td>
<td>EtherCat</td>
</tr>
<tr>
<td></td>
<td>Smart (Digital I/O)</td>
</tr>
<tr>
<td>Supervision interface</td>
<td>Ethernet - 10/100 Base TX</td>
</tr>
<tr>
<td>Fast Inputs</td>
<td>24 VDC type II, 15 mA</td>
</tr>
<tr>
<td>Fast Outputs</td>
<td>Work contact static relay 24VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0…50°C</td>
</tr>
<tr>
<td>Assembly</td>
<td>Symmetrical rail DIN EN50 023</td>
</tr>
<tr>
<td>Dimensions</td>
<td>L 292 mm, W 105 mm, H 96 mm</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP 20</td>
</tr>
<tr>
<td>Weight</td>
<td>2kg 125</td>
</tr>
</tbody>
</table>

### WattPilote Dual Evolution reference

**Part Nr.**

**WP-DX-$$X$$ 000**

- Profinet IO-RT: N
- Profinet DP Slave: B
- DeviceNet Slave: D
- Ethernet TCP/IP: E
- Smart Interface: S

Example - WP-DN-S032 : WattPilote Dual Evolution – 2 x 32kw three-phase spindle – Profinet interface
**Evolution Model range**

### General characteristics
- **Max number of different machining cycles**: 3 x 120
- **Minimum machining cycle time**: 0.07 sec.
- **Maximum machining cycle time**: 50 minutes
- **Reaction speed**: 0.005 sec.
- **Saved machining cycle curves**: 3 x last 30
- **Saved faults**: 3 x last 30
- **Saved wear rate**: 3 x last 65,000
- **Power, derivative, energy control**: Simultaneous
- **Measurement accuracy**: 0.01 %

### Technical characteristics
- **Power supply**: 24 VDC ± 10%, 1.3 A
- **PLC Protocol - Fieldbus**
  - ProfiNet IO-RT
  - Profinet-DP I/O Slave
  - DeviceNet Slave
  - Ethernet/IP
  - EtherCAT
  - Smart (Digital I/O)
- **Supervision interface**: Ethernet - 10/100 Base TX
- **Fast Inputs**: 24 VDC type II, 15 mA
- **Fast Outputs**: Work contact static relay 24VDC
- **Ambient temperature**: 0...50°C
- **Assembly**: Symmetrical rail DIN EN50 023
- **Dimensions**:
  - L 414 mm, W 105 mm, H 96 mm
- **Protection rating**: IP 20
- **Weight**: 3kg 000

### Technical characteristics (continued)
- **Assembly**:
  - Symmetrical rail DIN EN50 023
- **Dimensions**:
  - L 414 mm, W 105 mm, H 96 mm

### Technical characteristics (continued)
- **Protection rating**: IP 20
- **Weight**: 3kg 000

### WattPilote Triple Evolution reference

**WP–GX–X 000**
- **ProfiNet IO-RT**: N 000 : Power rating in kW
- **ProfiBus DP Slave**: B S : Three-phase spindle motor
- **DeviceNet Slave**: D H : High-frequency three-phase spindle motor
- **Ethernet TCP/IP**: E A : Three-phase axis motor
- **Smart Interface**: S D : Direct current motor

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Example - WP-GN-S032 : WattPilote Triple Evolution – 3 x 32KW three-phase spindle – ProfiNet interface

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4 spindle machine tool with numeric control

**General characteristics**  
Evolution

- Max number of different machining cycles: 4 x 120
- Minimum machining cycle time: 0.07 sec.
- Maximum machining cycle time: 50 minutes
- Reaction speed: 0.005 sec.
- Saved machining cycle curves: 4 x last 30
- Saved faults: 4 x last 30
- Saved wear rate: 4 x last 65,000
- Power, derivative, energy control: Simultaneous
- Measurement accuracy: 0.01 %

**Technical characteristics**  
Quad

- Power supply: 24 VDC ± 10%, 1.7 A
- PLC Protocol - Fieldbus: ProfiNet IO-RT, Profinet-DP I/O Slave, DeviceNet Slave, Ethernet/IP, EtherCat, Smart (Digital I/O)
- Supervision interface: Ethernet - 10/100 Base TX
- Fast Inputs: 24 VDC type II, 15 mA
- Fast Outputs: Work contact static relay 24VDC
- Ambient temperature: 0 ... 50°C
- Assembly: Symmetrical rail DIN EN50 023
- Dimensions: L 536 mm, W 105 mm, H 96 mm
- Protection rating: IP 20
- Weight: 3kg 820

**WattPilote Quad Evolution reference**  
Part Nr.

WP-QX-X 000

- ProfiNet IO-RT: N 000: Power rating in kW
- ProfiBus DP Slave: S Three-phase spindle motor
- DeviceNet Slave: D H: High-frequency three-phase spindle motor
- Ethernet TCP/IP: E A: Three-phase axis motor
- Smart Interface: S D: Direct current motor