Type PC e-Rated® Power Center™
with Integrated Circuit Breakers and a
Type TPM Transformer Performance Meter™

General Product Description
As an alternative to conventional distribution systems, which typically include a distribution transformer with primary and/or secondary panelboards, or a legacy power distribution unit, Type PC e-Rated® Power Centers™ provide a compact, cost-effective, ultra-efficient, load compatible power source that can be closely matched to a designer’s specific requirements. Type PC Power Centers™ include integrated primary and/or secondary circuit breakers and Type TPM Transformer Performance Meters™, which determine the transformer’s losses and efficiency, and provide a detailed load analysis.

Features and Benefits
Reduced Footprint
• Compact designs conserve valuable floor space
• Enclosures with side mounted circuit breakers are identical to standard transformer enclosures of the same kVA rating or one size up
• Enclosures with front mounted circuit breakers are identical to standard transformer enclosures with the same kVA rating in width and depth, but extended in height to accommodate the circuit breakers
• The maximum number of circuit breakers that can be accommodated in a standard enclosure is dependent on the transformer’s rating and enclosure size
• Type PC Power Centers reduce a standard installation footprint, which includes a primary and secondary panelboard, by up to 58% (45kVA Power Center at 24.5” vs. conventional installation at 59”)

Simplified Installation
• UL Listed and CSA Certified to meet safety requirements for hassle free inspections and building code approvals
• Eliminates the material and labor cost of installing a primary panel and secondary feeder breaker panel
• True front access for easy installation and maintenance
• NEC® 410.10A compliant, factory-installed ground bus
• Top/bottom cable entry allows the Power Center to be positioned near walls or other equipment, requiring less space and service clearances than similarly rated PDUs.
• Includes Input & Ground Compression Lugs

Power Source Flexibility
• All ratings between 15kVA and 1500kVA
• Provides a power source that can be closely matched to a designer’s specific requirements
• Configurable and customizable to meet specific customer needs, with the shortest lead-times in the industry
• A wide selection of ultra-efficient Distribution Transformer and TransFilter™ types assures distribution system efficiency and load compatibility and efficiency

Transformer Performance Meter
• An Integrated Type TPM Transformer Performance Meter™ is available at no additional cost when specified
• The Type TPM Transformer Performance Meter’s™ separate enclosure allows for its reprogramming, modification or replacement without the need to de-energize the transformer

Options
• Optional IR Scan Window
• Designs can be optimized to limit inrush, short-circuit and arc flash levels

Additional Financial Benefits
• Labor cost reduced by 35%
• Provides the most attractive payback & ROI in the industry
• Reduces energy & lifecycle costs for both new construction and retrofits (when replacing existing PDUs)
• To increase transformer efficiency, the Type PC’s kVA rating can be matched to anticipated or measured peak loading, when replacing conventional PDUs with Power Centers™ per CSA C802.4 or nationalgrid® recommendations
• Reduces environmental impact consistent with Green Building™ initiatives

Type PC Power Center™
with three Side Mounted Feeder Circuit Breakers
The PQI Solution™

Power Quality International’s Application Engineers use IEEE Std. C57.110 and CSA C802.5 compliant engineering software (The PQI Calculator™) to quickly and accurately determine and compare the losses and efficiencies of any two transformers under any anticipated or measured load profile. The software can also be used to compare an existing and proposed transformer in a replacement scenario.

Given the comparative cost of each Power Center in a new construction or replacement scenario and the utility rates, the software calculates the annual energy savings, including A/C costs, payback on incremental or replacement costs, return-on-investment and EPA environmental benefits. PQI offers these analytical services, with recommendations, on a ‘no charge’ basis.

Historical vs. PQI Energy Efficiencies [1]

<table>
<thead>
<tr>
<th>Voltage (kVA)</th>
<th>TP 1-2002</th>
<th>Premium</th>
<th>DOE 2016</th>
<th>PQI Z3 Exceeds</th>
<th>PQI Z3+ Exceeds</th>
<th>PQI Z4 Exceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>97.00</td>
<td>97.90</td>
<td>97.89</td>
<td>97.97</td>
<td>98.25</td>
<td>98.43</td>
</tr>
<tr>
<td>30</td>
<td>97.50</td>
<td>98.25</td>
<td>98.23</td>
<td>98.29</td>
<td>98.52</td>
<td>98.68</td>
</tr>
<tr>
<td>45</td>
<td>97.70</td>
<td>98.39</td>
<td>98.40</td>
<td>98.45</td>
<td>98.66</td>
<td>98.81</td>
</tr>
<tr>
<td>75</td>
<td>98.00</td>
<td>98.60</td>
<td>98.60</td>
<td>98.64</td>
<td>98.82</td>
<td>98.95</td>
</tr>
<tr>
<td>112.5</td>
<td>98.20</td>
<td>98.74</td>
<td>98.74</td>
<td>98.77</td>
<td>98.93</td>
<td>99.05</td>
</tr>
<tr>
<td>150</td>
<td>98.30</td>
<td>98.81</td>
<td>98.83</td>
<td>98.86</td>
<td>99.01</td>
<td>99.12</td>
</tr>
<tr>
<td>225</td>
<td>98.50</td>
<td>98.95</td>
<td>98.94</td>
<td>98.97</td>
<td>99.10</td>
<td>99.20</td>
</tr>
<tr>
<td>300</td>
<td>98.60</td>
<td>99.02</td>
<td>99.02</td>
<td>99.04</td>
<td>99.16</td>
<td>99.26</td>
</tr>
<tr>
<td>500</td>
<td>98.70</td>
<td>99.09</td>
<td>99.14</td>
<td>99.16</td>
<td>99.26</td>
<td>99.35</td>
</tr>
<tr>
<td>750</td>
<td>98.80</td>
<td>99.16</td>
<td>99.33</td>
<td>99.24</td>
<td>99.33</td>
<td>99.41</td>
</tr>
<tr>
<td>1000</td>
<td>98.90</td>
<td>99.23</td>
<td>99.28</td>
<td>99.29</td>
<td>99.38</td>
<td>99.45</td>
</tr>
</tbody>
</table>

Historical vs. PQI Energy Efficiencies Notes:

[1] Efficiency values are measured at 35% of nameplate rating.


[4] PQI Z3 & Z4 efficiencies exceed the requirements of DOE Candidate Standard Levels 3 & 4 (CSL 3 & CSL 4) respectively.

Type PC e-Rated® Ultra-Efficient Power Center

Product Selection Note [1] – Selections that are identified as ‘standard’ are not required when creating a Model Number.

Options

1. Transformer Type: DV, EY, GY or SY
2. Electrostatic Shield: Single (ES), Dual (2ES), Triple (3ES)
3. Low Inrush: Four times Full Load Current (4xIL)
4. Thermal Sensors (TS)
5. K-Rating
6. ICB (Input Circuit Breaker)
7. OCB (Output Circuit Breaker)

Model Number Sequencing


Sample Model Number

PC-60-300-480/139-115-DV-ES-6T-1IBC-3OCB-AL-Z4

Right Side View

20kVA Power Center™

with three Side Mounted Feeder Circuit Breakers

Left Side View

Power Quality International’s Application Engineers use IEEE Std. C57.110 and CSA C802.5 compliant engineering software (The PQI Calculator™) to quickly and accurately determine and compare the losses and efficiencies of any two transformers under any anticipated or measured load profile. The software can also be used to compare an existing and proposed transformer in a replacement scenario.

Given the comparative cost of each Power Center in a new construction or replacement scenario and the utility rates, the software calculates the annual energy savings, including A/C costs, payback on incremental or replacement costs, return-on-investment and EPA environmental benefits. PQI offers these analytical services, with recommendations, on a ‘no charge’ basis.

Historical vs. PQI Energy Efficiencies [1]

<table>
<thead>
<tr>
<th>Voltage (kVA)</th>
<th>TP 1-2002</th>
<th>Premium</th>
<th>DOE 2016</th>
<th>PQI Z3 Exceeds</th>
<th>PQI Z3+ Exceeds</th>
<th>PQI Z4 Exceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>97.00</td>
<td>97.90</td>
<td>97.89</td>
<td>97.97</td>
<td>98.25</td>
<td>98.43</td>
</tr>
<tr>
<td>30</td>
<td>97.50</td>
<td>98.25</td>
<td>98.23</td>
<td>98.29</td>
<td>98.52</td>
<td>98.68</td>
</tr>
<tr>
<td>45</td>
<td>97.70</td>
<td>98.39</td>
<td>98.40</td>
<td>98.45</td>
<td>98.66</td>
<td>98.81</td>
</tr>
<tr>
<td>75</td>
<td>98.00</td>
<td>98.60</td>
<td>98.60</td>
<td>98.64</td>
<td>98.82</td>
<td>98.95</td>
</tr>
<tr>
<td>112.5</td>
<td>98.20</td>
<td>98.74</td>
<td>98.74</td>
<td>98.77</td>
<td>98.93</td>
<td>99.05</td>
</tr>
<tr>
<td>150</td>
<td>98.30</td>
<td>98.81</td>
<td>98.83</td>
<td>98.86</td>
<td>99.01</td>
<td>99.12</td>
</tr>
<tr>
<td>225</td>
<td>98.50</td>
<td>98.95</td>
<td>98.94</td>
<td>98.97</td>
<td>99.10</td>
<td>99.20</td>
</tr>
<tr>
<td>300</td>
<td>98.60</td>
<td>99.02</td>
<td>99.02</td>
<td>99.04</td>
<td>99.16</td>
<td>99.26</td>
</tr>
<tr>
<td>500</td>
<td>98.70</td>
<td>99.09</td>
<td>99.14</td>
<td>99.16</td>
<td>99.26</td>
<td>99.35</td>
</tr>
<tr>
<td>750</td>
<td>98.80</td>
<td>99.16</td>
<td>99.33</td>
<td>99.24</td>
<td>99.33</td>
<td>99.41</td>
</tr>
<tr>
<td>1000</td>
<td>98.90</td>
<td>99.23</td>
<td>99.28</td>
<td>99.29</td>
<td>99.38</td>
<td>99.45</td>
</tr>
</tbody>
</table>

Historical vs. PQI Energy Efficiencies Notes:

[1] Efficiency values are measured at 35% of nameplate rating.

Type PC Transformer Specifications

Transformer Type: DV, EY, GY & SY
Primary-Secondary Phase-Shift: 0°, -15°, -20°, -30°, -40°, -45° (as required for Types DV, SY & GY only)
Voltage Class: 1.2kV
Insulation Class: R (220°C) Nomex
BIL Rating: 10kV (Std. for Class)
Cooling: ANN (Air, Internal/External Circ., Natural)
Seismic Withstand: Per IBC & CBC requirements with OSHPD Seismic Certification (Sos = 2.1g)