PT3 is a range of compact, configurable multiple measurand transducers designed to meet the demanding needs of supply utilities and industrial applications. It offers accurate true-RMS measurements for high efficiency and quick response time. It is equipped with up to four load-independent, galvanically-isolated analogue outputs that can be configured for desired measurands, input range and different curves. PT3 transducers comply with IEC 60688.

- Best in class response time
- Long range, site-configurable inputs, outputs and measurands
- Load-independent accuracy on all outputs
- 4-in-1 programmable transducers
- Diagnostic LEDs
- Compact footprint

<table>
<thead>
<tr>
<th>Measurement functions (Measurands)</th>
<th>Output range</th>
<th>No. of outputs</th>
<th>Accuracy class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, active power, frequency, reactive power, power factor, apparent power</td>
<td>0-1 mA*, 0-2 mA**, 0-5 mA**, 0-10 mA, 0-20 mA, 4-20 mA, -20 - (+20) mA, -10- (+10) mA, -5- (+5) mA**, -2- (+2) mA**, -1- (+1) mA*, 0-5 V, 0-10 V, -10- (+10) V, -5- (+5) V</td>
<td>2 or 4</td>
<td>0.2, 0.5, 1.0</td>
</tr>
<tr>
<td>Voltage</td>
<td>0-1 mA*, 0-2 mA**, 0-5 mA**, 0-10 mA, 0-20 mA, 4-20 mA, 0-5 V, 0-10 V</td>
<td>2 or 4</td>
<td>0.2, 0.5, 1.0</td>
</tr>
</tbody>
</table>

*available in accuracy class 1.0
**available in accuracy class 0.5 and class 1.0
Power factor accuracy ± 0.2 degree at nominal input range
PT3: three phase
multi-function transducers

Output curves

Curve A
Linear

Curve B
Linear with live zero

Curve F
Compressed upper region

Curve F
Compressed lower region

Curve C
Bipolar

Curve D
Bipolar with live zero

Mechanical dimensions

Front view
Side view
Isometric view
### Technical specifications

**Site-configurable measurement functions (measurands)**

#### AC voltage

- **Nominal input** ($U_n$): 3 x 100 to 415 V L-L (3-phase 3-wire system)  
  3 x 57.5 to 240V L-N (3-phase 4-wire system)
- **Measuring range**: 0 to 130% $U_n$ (500 V max.)
- **Measurement frequency**: 50/60 Hz (± 5 %)
- **Burden**: ≤0.2 VA
- **Maximum overload voltage**: 1.3 x $U_n$, continuously (500 V max.)  
  2 x $U_n$, for 1 s, with up to 10 repetitions at 10 s intervals
- **Scale factor**: 0.8 to 1.5 $U_n$

#### AC current

- **Nominal input** ($I_n$): 1A to 5A
- **Maximum input current**: 0 to 150% $I_n$
- **Scale factor**: 0.6 to 1.5
- **Burden**: ≤ 0.2 VA per phase
- **Maximum overload current**: 20 x $I_n$ for 1 s, with up to 10 repetitions at 100 s intervals

#### Active power/reactive power/apparent power

- **Nominal input voltage** ($U_n$): 3 x 100 to 415 V L-L (3 phase 3 wire system)  
  3 x 57.5 to 240V L-N (3 phase 4 wire system)
- **Input voltage range**: 0-130% $U_n$ (up to 500 V)
- **Nominal input current** ($I_n$): 1A to 5A
- **Input current range**: 0 to 150% $I_n$
- **Measurement frequency**: 50/60 Hz (± 5 %)
- **Scale factor**: 0.5 to 1.5 (active power, at unity power factor)  
  0.3 to 1 (reactive power, at reactive power factor >0.8 or unity)  
  $U_n$ x $I_n$ primary (apparent power)

#### Active power factor/load power factor

- **Nominal input voltage** ($U_n$): 3 x 100 to 415 V L-L (3 phase 3 wire system)  
  3 x 57.5 to 240V L-N (3 phase 4 wire system)
- **Input voltage range**: 0-130% $U_n$ (up to 500 V)
- **Nominal input current** ($I_n$): 1A to 5A
- **Input current range**: 0 to 150% $I_n$
- **Measurement frequency**: 50/60 Hz (± 5 %)
- **Measurement range**: -1...0...1
- **Resolution (phase angle)**: ±0.2 degree (at nominal range)

#### Frequency

- **Nominal input voltage** ($U_n$): 3 x 100 to 415 V L-L (3 phase 3 wire system)  
  3 x 57.5 to 240V L-N (3 phase 4 wire system)
- **Nominal input current** ($I_n$): 1A to 5A
- **Measurement range**: 45Hz to 55Hz or 55Hz to 65Hz
- **Accuracy**: ± 0.2%

#### Auxiliary Supply

**High auxiliary**
- **Nominal voltage range**: 80-276 V AC/DC (±10 %)
- **Frequency**: 50/60 Hz
- **Maximum burden**: ≤11VA, 6 W with two outputs at 750 Ω each
  ≤12 VA, 7 W with four outputs at 750 Ω each

**Low auxiliary**
- **Nominal voltage range**: 24-80 V DC (±10 %)
- **Maximum burden**: ≤6 W with two outputs at 750 Ω each
  ≤8 W with four outputs at 750 Ω each
## Technical specifications

**Analogue outputs**
- **Type**: Current & Voltage (bipolar)
- **Maximum Load resistance**: ≤750 Ω for 20 mA, ≥2 kΩ for 10 V (for each output)
- **Response time**: 5 cycles measurement (≤100-250 ms)
- **Ripple**: <0.4 % peak to peak

<table>
<thead>
<tr>
<th>Temperature range</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-5°C to +55°C</td>
</tr>
<tr>
<td><strong>Storage temperature</strong></td>
<td>-25°C to +70°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimension (W x H x D)</strong></td>
<td>100 x 75 x 105 mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.7 kg (approx.)</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>Fire-retardant polycarbonate (PC-FR), UL94 V-0</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>DIN (EN 50022)</td>
</tr>
<tr>
<td><strong>Connector type</strong></td>
<td>Screw terminals</td>
</tr>
<tr>
<td><strong>Conductor size for terminals</strong></td>
<td>≤4 mm²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protection class</strong></td>
<td>II (double insulation) EN 61010-1</td>
</tr>
<tr>
<td><strong>Pollution degree</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Installation category</strong></td>
<td>CAT III for ≤ 300V AC and CAT II for ≤ 600V AC</td>
</tr>
<tr>
<td><strong>Protection degree</strong></td>
<td>Protection housing: IP 40, terminals: IP 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards compliance</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standards</strong></td>
<td>IEC 60688, IEC 61010-1, IEC 61010-2-30, IEC 61326-1, DIN 50022</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication ports</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Micro USB B-Type</strong></td>
<td>For configuration</td>
</tr>
<tr>
<td><strong>RS-485</strong></td>
<td>Can be configured without auxiliary power</td>
</tr>
<tr>
<td><strong>Baud rate</strong></td>
<td>Modbus RTU enabled (Suitable for integration with SCADA/PLC)</td>
</tr>
<tr>
<td><strong>1200-38400 baud</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Configuration software</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configview</strong></td>
<td>For on-site configuration of measurement inputs, measurands, output curve and online parameter reading. It can be freely downloaded from <a href="http://www.securemeters.com">www.securemeters.com</a></td>
</tr>
</tbody>
</table>

### Ordering key

**PT XX3-1YF**

- **X**: Output
  - 2: 2 nos.
  - 4: 4 nos.

- **3**: Aux supply
  - 6: High
  - 7: Low

- **1**: Accuracy
  - 1: Cl 1.0
  - 2: Cl 0.2
  - 5: Cl 0.5

- **Y**: as per configuration

**Example**

PT 643-12F
- high auxiliary (6), output nos. (4), accuracy class(2)