# PT3: three phase

multi-function transducers

Accurate class 0.2, 0.5 & 1

USB programming

Response time ~100-220 ms

Modbus RTU

## Compact, long range site configurable transducers

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

| Measurement functions (Measurands) | Output range | No. of outputs | Accuracy class |
|---|---|---|---|
| Current, active power, frequency, reactive power, power factor, apparent power | 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 | 2 or 4 | 0.2, 0.5, 1.0 |
| Voltage | 0-1 mA*, 0-2 mA**, 0-5 mA**, 0-10 mA, 0-20 mA, 4-20 mA 0-5 V, 0-10 V | 2 or 4 | 0.2, 0.5, 1.0 |

*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

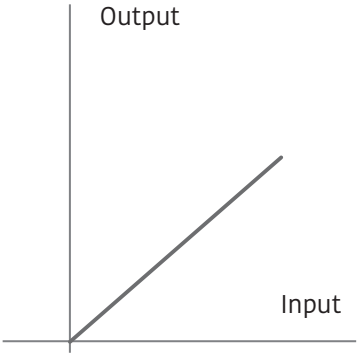
SECURE energy together

# PT3: three phase

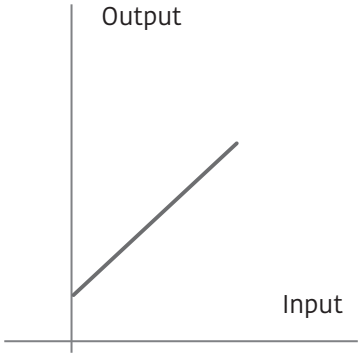
multi-function transducers

## Output cuves

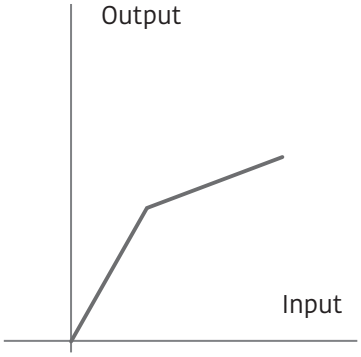
Curve A
Linear



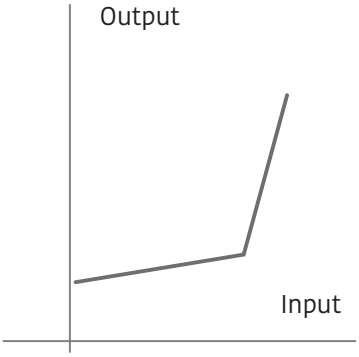

Curve B
Linear with live zero



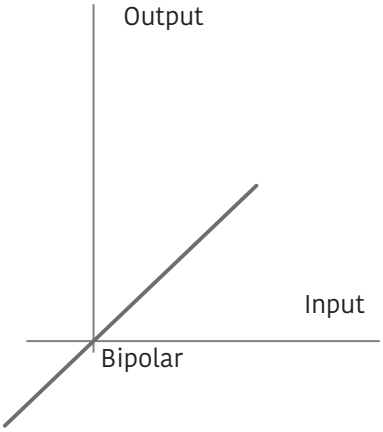

Curve F
Compressed upper region



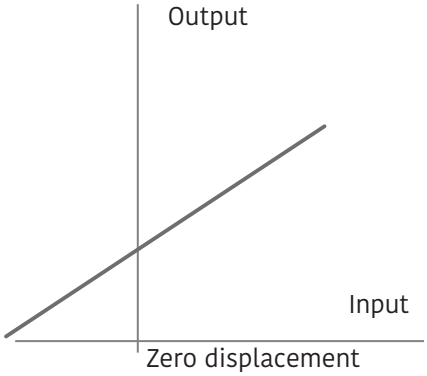

Curve F
Compressed lower region



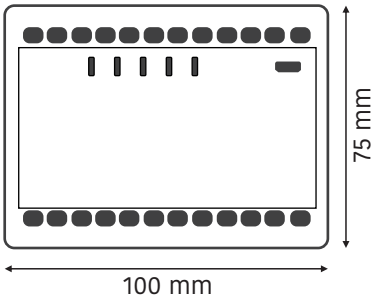

Curve C
Bipolar



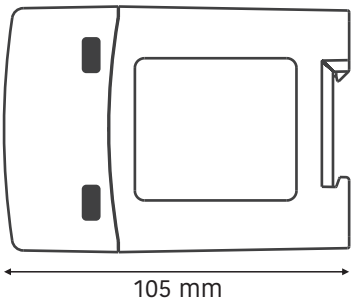

Curve D
bipolar with live zero



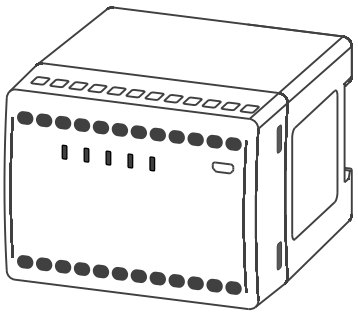

## Mechanical dimensions




Front view




Side view



Isometric view

# PT3: three phase

multi-function transducers

## 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)<br>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.)<br>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 | 2 x $I_n$ continuously<br>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)<br>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)<br>0.3 to 1 (reactive power, at reactive power factor >0.8 or unity)<br>$U_n$ 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)<br>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)<br>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<br>≤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<br>≤8 W with four outputs at 750 Ω each |

# PT3: three phase

multi-function transducers

## 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 |
| **Temperature range** | |
| Operating temperature | -5°C to +55°C |
| Storage temperature | -25°C to +70°C |
| Usage group | 1 |
| **Mechanical** | |
| Dimension (W x H x D) | 100 x 75 x 105 mm |
| Weight | 0.7 kg (approx.) |
| Material | Fire-retardant polycarbonate (PC-FR), UL94 V-0 |
| Mounting | DIN (EN 50022) |
| Connector type | Screw terminals |
| Conductor size for terminals | ≤4 $mm^2$ |
| **Environmental** | |
| Protection class | II (double insulation) EN 61010-1 |
| Pollution degree | 2 |
| Installation category | CAT III for ≤ 300V AC and CAT II for ≤ 600V AC |
| Protection degree | Protection housing: IP 40, terminals: IP 20 |
| **Standards compliance** | |
| Standards | IEC 60688, IEC 61010-1, IEC 61010-2-30, IEC 61326-1, DIN 50022 |
| **Communication ports** | |
| Micro USB B-Type | For configuration<br>Can be configured without auxiliary power |
| RS-485 | Modbus RTU enabled (Suitable for integration with SCADA/PLC) |
| Baud rate | 1200-38400 baud |
| **Configuration software** | Configview<br>For on-site configuration of measurement inputs, measurands, output curve and online parameter reading. It can be freely downloaded from www.securemeters.com |

## Ordering key

PT XX3-1YF

| X | X | 3 | – | 1 | Y | F |
|---|---|---|---|---|---|---|

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

**Output**
2: 2 nos.
4: 4 nos.

**Accuracy**
1: Cl 1.0
2: Cl 0.2
5: Cl 0.5
7: Accuracy as per configuration

### Example

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



Australia
sales_australia@securemeters.com
www.securemeters.com/au

Dubai
sales_middleeast@securemeters.com
www.securemeters.com/me

Europe
sales_europe@securemeters.com
www.securemeters.com/eu

India, SE Asia, Africa
sales_india@securemeters.com
www.securemeters.com/in

UK
sales_uk@securemeters.com
www.securemeters.com/uk

**www.securemeters.com**

01-18/Ver 1.0/skv