# POWER TRANSDUCER

## Introduction

Power transducer is an electrical device used to measure, monitor, and transmit electrical parameters, typically be applied in power systems and industrial control applications.

The main function is to convert power parameters, such as voltage, current, frequency, power factor and active/reactive power, into standard voltage or current signals for monitoring, control and data collection.
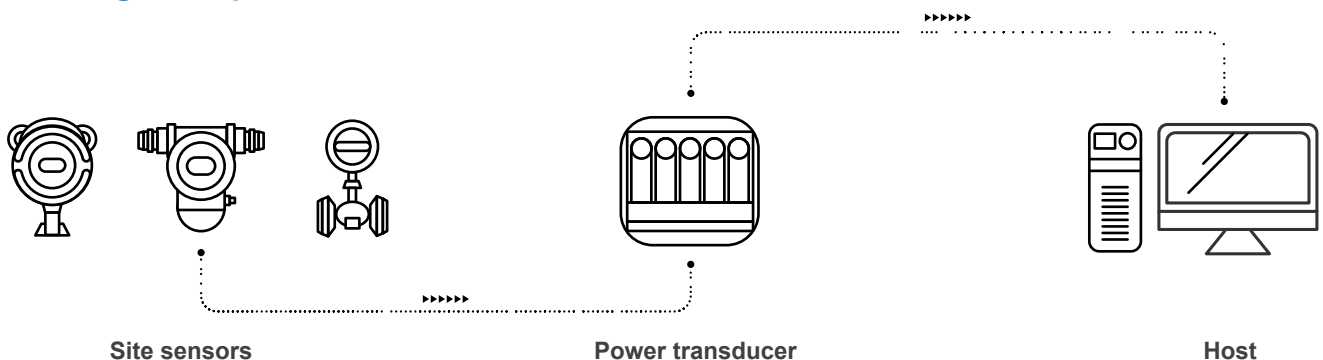
## Application

- Power system monitoring and management.
- Industrial automation, motor control and protection.
- Data collection and reporting for power equipment.
- Lighting system control and energy saving.
- Battery management systems.

## Main Features

- High-precision measures electrical parameters such as voltage, current, and power.
- Signal converts into standard voltage or current signals for easy transmission and processing.
- Features current isolation to safeguard against interference by isolating input and output circuits.
- RS485 remote monitoring and data analysis.
- Programmability: Offers configurability for various parameters and alarm settings.
- Real-time monitoring network performance and stability.

## Working Principle

Site sensors        Power transducer        Host

# QPPX 3-PHASES PROGRAMMABLE POWER TRANSDUCER

## ▊ Introduction

QPPX AC programmable transducer has 4 independent channels output, can be used to measure a wide range of electrical parameters and convert analog or digital signals to suitable for meters or PLC control systems. QPPX has signal isolation to ensure transmitted signal safety and accuracy.

Users can easily program, monitor and retrieve measurement data via panel buttons or PC interface. Users can freely configure up to 4 types of data out of 26 different electrical parameters for sampling and generating analog signal output.

## ▊ Main Features

- 85~265VAC wide range voltage optional.
- 400ms response time, 2000V isolation protection.
- With RS485 port for remote control electrical data.
- Programmable settings, freely configurable parameters.
- Accuracy 0.5 class measurement and signal conversion.
- 35mm Din rail mounting, high-definition screen displays.
- 4 Channel output (max 26 types parameter for analog output).

## ▊ Application

- SCADA system.
- Industrial automation applications.
- Instrumentation and control systems.
- Renewable energy systems.
- Power generation facilities.
- Utility and grid monitoring.

## ▊ Technical Characteristics

| Parameter | Value |
|---|---|
| Power supply | AC/DC 85~265VAC/DC |
| Input | Voltage: 110/220/400VAC (..Customer specified) |
| | Current: 1/5A AC (Customer specified) |
| | Frequency: 40-65Hz |
| Output | DC 4 ~ 20 mA / 0~20mV / 0-5V / 0-10V (..Customer specified) |
| Load resistance | ≤ 510Ω in current output, ≥ 10KΩ in voltage output |
| Accuracy | ≤ ±0.5% |
| Accuracy drift | Annual variation < 0.2% |
| Response time | ≤ 400 ms |
| Isolation | Input / output / power supply |
| Power consumption | AC < 3VA |
| Case material | ABS fireproof materials |
| Insulation voltage | AC 2KV RMS / min |
| Weight | About 450g |
| Overload voltage | 2 times 10 seconds(Instantaneous), 1.2 times in last. |
| Overload current | 10 times 1 seconds(Instantaneous), 1.2 times in last. |
| Insulation resistance | When AC 500V ,≥100 MΩ |
| Dimension | 87.3(W) X 132(H) X 35(D) mm |
| Installation | Fixed in a standard 35mm (1.38 inch) DIN rail or screwed on the cabinet. |
| Working condition | 0 ~ 50℃/ less than 95% RH (Non-condensing) |
| Storage conditions | -20 ~ 70℃/ less than 70% RH (Non-condensing) |

# QP/DP SERIES
# POWER TRANSDUCER

## ▮ Introduction

QP/DP series power transducer adopt microcontroller technology as the core using the latest algorithms to achieve precise measurement. The AC/DC grid transducer is designed to convert AC/DC voltage or current inputs into a load-independent output signal.

QP/DP series transducer exhibits exceptional temperature stability and reliable operational performance. It derives its output signal through precise calculation of the root mean square measurement of the input signal, making it compatible with distorted waveforms.
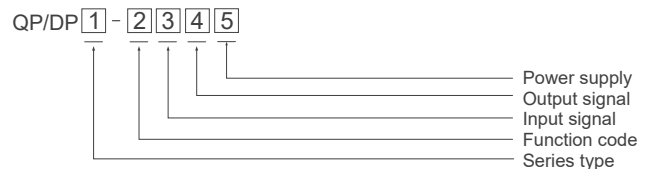
## ▮ Main Features

- 200ms response time.
- 35mm Din rail mounting.
- 0.2 measurement accuracy.
- RMS measurement and output
- Support customized parameters.
- Single/Three phase independent measurement.
- AC Voltage Input: 110V,220V,380V optional.
- Output: 0-5V,0-10V,4-20mA, 0-20mA optional.

## ▮ Application

- AC/DC grid systems.
- Medium and low voltage systems.
- Metering of distribution feeders, transformers.
- Generators,capacitor banks and motors.
- Measuring converter: optional association of an instantaneous Analogue outputs available (0...20 mA / 4...20 mA).

## ▮ Ordering Information

QP/DP 1 - 2 3 4 5

- Power supply
- Output signal
- Input signal
- Function code
- Series type

| Num. | Code | Description |
|---|---|---|
| 1 | QP | For AC grid measurement and transducer |
| | DP | For DC grid measurement and transducer |
| 2 | V | Single phase voltage |
| | A | Single phase current |
| | VX | Three phases voltage |
| | AX | Three phases current |
| | W | Three phases active power |
| | K | Three phases reactive power |
| | WK | Three phases active&reactive power |
| 3 | A0 | Customized current input |
| | A1 | 0-1A |
| | A2 | 0-5A |
| | V0 | Customized voltage input |
| | V1 | 0-5V |
| | V2 | 0-10V |
| | V3 | 0-100V |
| | V4 | 0-220V |
| | V5 | 0-400V |
| 4 | S0 | Customized current output |
| | S1 | 0-20mA |
| | S2 | 4-20mA |
| | S3 | 0-5V |
| | S4 | 0-10V |
| 5 | P1 | 85-265VAC |
| | P2 | 24VDC |
| | P3 | 48VDC |

# Technical Characteristics

| Power signal inputs | |
| --- | --- |
| Rating | ../1A or ../5A C.T. connected |
| | 110V, 230V, 400V, 415VAC |
| Power consumption | <1 VA voltage |
| | <0.2 VA current |
| Overload capacity | 1.2 times continuous |
| | 5 sec @ 10 times of rated current, 2sec @ 2 times of rated voltage |
| Frequency range | 50Hz, 60Hz |

| Measurement output | |
| --- | --- |
| Standard outputs (others on request) | 4~20mA, 0~5V |
| | 0~20mA |
| | 5~10V |
| | 0~10V |
| Maximum load | <750 Ω (0-20mA, 4-20mA) |
| | >2000 Ω (voltage output) |
| Ripple | <1% peak to peak |
| Response time | <250ms 0-90% |
| | <500ms 0-99% |

| Measurement accuracy | |
| --- | --- |
| Class | ±0.5 % complying with IEC 60688 |
| Accurate range | 0 - 120% |
| Frequency influence | <0.02% per Hz |
| Load influence | <0.25% of F.S. for specific load range |

| Auxiliary supply | |
| --- | --- |
| Rating | 85-265Vac/dc,optional 12V, 24V, 48VDC |
| Consumption | <3VA |

| Galvanic isolation between I/O and AUX | |
| --- | --- |
| Test voltage | 2KV RMS 50Hz for 1 minute |
| Impulse | 4KV 1.2/50μsec waveform |

| Environment | |
| --- | --- |
| Operating | -10~55°C |
| Storage | -40~70°C, 20 ~ 93%RH ; noncondensing |

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Technology of Electrical Automatic