

# PACT RCP-4000A-1A-D140 - Current transformer



2904922

<https://www.phoenixcontact.com/us/products/2904922>

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Set consisting of one 1 A measuring transducer and one Rogowski coil with signal line. Length of Rogowski coil: 450 mm, diameter: 140 mm. Length of signal line: 3 m. The Rogowski coil measures the AC current of busbars and power lines.



## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2904922             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | C444                |
| Product key                          | CK4A12              |
| Catalog page                         | Page 222 (C-5-2019) |
| GTIN                                 | 4046356900959       |
| Weight per piece (including packing) | 441.6 g             |
| Weight per piece (excluding packing) | 390.8 g             |
| Customs tariff number                | 85437090            |
| Country of origin                    | DE                  |

## Technical data

### Product properties

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| Product type               | Current transformer                                                    |
| Insulation characteristics |                                                                        |
| Insulation                 | double insulation                                                      |
| Insulation characteristics |                                                                        |
| Insulation                 | double insulation                                                      |
| Overvoltage category       | III (1000 V, to neutral conductor)<br>IV (600 V, to neutral conductor) |
| Pollution degree           | 2                                                                      |

### Electrical properties

|                          |                                                                                                                                                                     |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical isolation     | Reinforced insulation in accordance with IEC 61010-1                                                                                                                |
| Typical measuring error  | < 1 %                                                                                                                                                               |
| Protective circuit       | Surge protection; 33 V suppressor diode                                                                                                                             |
| Temperature coefficients | 0.005 %/K (+10 °C ... +70 °C, both components have the same ambient temperature)<br>0.07 %/K (-20 °C ... +10 °C, both components have the same ambient temperature) |

### Measuring coil

|                                 |                                                                 |
|---------------------------------|-----------------------------------------------------------------|
| Conductor structure signal line | 2x 0.22 mm (Signal (tinned))<br>1x 0.22 mm (Shielding (tinned)) |
| Insulation                      | double insulation                                               |
| Rated insulation voltage        | 1000 V AC (rms CAT III)<br>600 V AC (rms CAT IV)                |
| Test voltage                    | 10.45 kV DC (60 s)                                              |
| Basic accuracy                  | <± 0.2 %                                                        |

### Measuring transducers

|                            |                                                   |
|----------------------------|---------------------------------------------------|
| Linearity error            | < 0.5 % (From the range end value)                |
| Maximum transmission error | ≤ 0.5 % (From the range end value)                |
| Frequency range            | 45 Hz ... 65 Hz                                   |
| Max. detectable harmonics  | < 2 kHz                                           |
| Current consumption        | < 190 mA (at 19.2 V)                              |
| Test voltage               | 1.5 kV AC (Supply/input and output: 50 Hz, 1 min) |

### General

|                   |                                            |
|-------------------|--------------------------------------------|
| Can be calibrated | no                                         |
| Class             | 1                                          |
| Accuracy class    | 1                                          |
| Converter type    | Rogowski coil and 1 A measuring transducer |

Supply: Measuring transducers

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2904922

<https://www.phoenixcontact.com/us/products/2904922>

|                              |                         |
|------------------------------|-------------------------|
| Nominal supply voltage       | 24 V DC -20 % ... +25 % |
| Nominal supply voltage range | 19.2 V DC ... 30 V DC   |
| Max. current consumption     | 190 mA                  |
| Power consumption            | 4 W                     |

## Input data

### Frequency

|                           |                    |
|---------------------------|--------------------|
| Designation               | Measuring coil     |
| Frequency measuring range | 40 Hz ... 20000 Hz |
| Position error            | <± 0.1 % (typical) |
| Linearity error           | < 0.1 %            |

### Signal

|                         |                                  |
|-------------------------|----------------------------------|
| Input signal (at 50 Hz) | 100 mV (1000 A)                  |
| Curve type              | Sine                             |
| Input impedance         | 27 kΩ (smallest measuring range) |

### Current transformers

|                                |                                            |
|--------------------------------|--------------------------------------------|
| Configurable/programmable      | Via DIP switches                           |
| Rated power                    | 1.5 VA                                     |
| Primary rated current $I_{pn}$ | 0 A AC ... 100 A AC                        |
|                                | 0 A AC ... 250 A AC                        |
|                                | 0 A AC ... 400 A AC                        |
|                                | 0 A AC ... 630 A AC                        |
|                                | 0 A AC ... 1000 A AC                       |
|                                | 0 A AC ... 1500 A AC                       |
|                                | 0 A AC ... 2000 A AC                       |
|                                | 0 A AC ... 4000 A AC                       |
| Phase angle                    | < 1 °                                      |
| Can be calibrated              | no                                         |
| Class                          | 1                                          |
| Accuracy class                 | 1                                          |
| Converter type                 | Rogowski coil and 1 A measuring transducer |

## Output data

### Signal

|                                                   |                                                                                                                    |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Designation                                       | Measuring coil                                                                                                     |
| Output signal (at 50 Hz)                          | 100 mV (no load, at 1,000 A)                                                                                       |
| Output voltage (in no-load operation)             | $V_{OUT} = M \cdot dI/dt$                                                                                          |
| Output voltage (sinusoidal, in no-load operation) | 100 mV ( $V_{OUT} = 2 \cdot \pi \cdot M \cdot f \cdot I$ ( $M = 0.318 \mu H$ ; example: At 50 Hz; $I = 1,000 A$ )) |
| Accuracy class                                    | < 1                                                                                                                |

### Signal

|             |                      |
|-------------|----------------------|
| Designation | Measuring transducer |
|-------------|----------------------|

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|                                                  |                                      |
|--------------------------------------------------|--------------------------------------|
| Current output signal                            | 0 A AC ... 1 A AC                    |
| Rated power                                      | 1.25 VA                              |
| Load                                             | 0 $\Omega$ ... 1.25 $\Omega$         |
| Max. distances for copper cables at $P_{N \max}$ | 16 m (0.75 mm <sup>2</sup> (AWG 20)) |
|                                                  | 32 m (1.5 mm <sup>2</sup> (AWG 16))  |
|                                                  | 55 m (2.5 mm <sup>2</sup> (AWG 14))  |

## Connection data

### Measuring transducer side

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Screw connection                            |
| Stripping length                 | 7 mm                                        |
| Screw thread                     | M3                                          |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 24 ... 14                                   |
| Tightening torque                | 0.5 Nm ... 0.6 Nm                           |

## Signaling

|                           |           |
|---------------------------|-----------|
| Operating voltage display | Green LED |
|---------------------------|-----------|

## Dimensions

### Item dimensions

|        |         |
|--------|---------|
| Width  | 22.5 mm |
| Height | 85 mm   |
| Depth  | 70.4 mm |

### Measuring coil

|          |                     |
|----------|---------------------|
| Length   | 450 mm              |
| Diameter | 8.3 mm $\pm$ 0.2 mm |

### Measuring coil when installed

|          |        |
|----------|--------|
| Diameter | 140 mm |
|----------|--------|

### Signal line

|        |         |
|--------|---------|
| Length | 3 m     |
| Width  | 22.5 mm |
| Height | 85 mm   |
| Depth  | 70.4 mm |

## Material specifications

|                  |            |
|------------------|------------|
| Housing material | PC         |
|                  | Polyamide  |
| Coil material    | Elastollan |

## Environmental and real-life conditions

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2904922

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## Ambient conditions

|                                           |                                         |
|-------------------------------------------|-----------------------------------------|
| Measuring coil degree of protection       | IP67 (not assessed by UL)               |
| Measuring transducer degree of protection | IP20                                    |
| Ambient temperature (operation)           | -30 °C ... 80 °C (Measuring coil)       |
|                                           | -20 °C ... 70 °C (Measuring transducer) |
| Ambient temperature (storage/transport)   | -40 °C ... 80 °C (Measuring coil)       |
|                                           | -25 °C ... 85 °C (Measuring transducer) |
| Altitude                                  | < 2000 m                                |
| Permissible humidity (operation)          | 5 % ... 95 % (non-condensing)           |

## Approvals

### CE

|             |              |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

### UKCA

|             |                |
|-------------|----------------|
| Certificate | UKCA-compliant |
|-------------|----------------|

### CMIM

|             |                |
|-------------|----------------|
| Certificate | CMIM-compliant |
|-------------|----------------|

### UL, USA/Canada

|                |                     |
|----------------|---------------------|
| Identification | UL 61010 Recognized |
| Note           | Measuring coil      |

### UL, USA/Canada

|                |                      |
|----------------|----------------------|
| Identification | UL 508 Listed        |
| Note           | Measuring transducer |

## EMC data

|                               |                                |
|-------------------------------|--------------------------------|
| Noise immunity                | EN 61000-6-3                   |
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission                | EN 61000-6-4                   |

## Standards and regulations

|                       |                                                      |
|-----------------------|------------------------------------------------------|
| Electrical isolation  | Reinforced insulation in accordance with IEC 61010-1 |
| Standards/regulations | IEC 61010-1                                          |
|                       | IEC 61010-2-032                                      |

## Mounting

|               |                   |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2904922>



**EAC**

Approval ID: RU\*DE\*08.B.01187/19

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27210902 |
| ECLASS-13.0 | 27210902 |
| ECLASS-12.0 | 27210902 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002048 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes                |
| Exemption                               | 6(c), 7(a), 7(c)-I |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

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## Accessories

### PACT RCP-CLAMP - Holder

2904895

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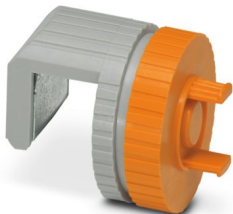
The optional holding device ensures the Rogowski coil is securely seated on busbars with a thickness of 10 ... 15 mm. During installation, the coil housing is pushed onto the flange of the holding device and snaps in automatically.

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### PACT RCP-CLAMP-5-10 - Holder

2907888

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The optional holding device ensures the Rogowski coil is securely seated on busbars that are 5 ... 10 mm thick. During installation, the coil housing is pushed onto the flange of the holding device and snaps in automatically.

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