

## ⇒ Highlights

PP Patent Protection

- Accuracy up to 0.2 % in amplitude and 0.1 ° in phase
- No additional error for wire position
- Symmetric flexible shielding PP for excellent suppression of strange electric fields
- Symmetric sensor coil PP for excellent suppression of strange magnetic fields
- Low noise, dual gain, high CMRR amplifier with precision integrator PP
- Low output impedance
- Super flexible sensor cable Ø 6 mm
- Low cost models with software calibration in serial EEPROM available in single or three phase version
- Extremely long sensor cable PP for large structures like buildings, towers, masts etc. *(optional)*
- Application tailored PP sensor cable sensitivity and frequency range *(optional)*
- High frequency matched PP sensor coil for broad frequency band and surge current measurements *(optional)*
- Calibration kit available *(optional)*

## ⇒ Description

Precision Flexible AC Current Probes SymmProFlex® FCP 3121 and FCP 3321 are current probes based on Rogowski principle designed to measure alternating current up to 3000 A, 6000 A, 12000 A or more.

Current Probes SymmProFlex® FCP 3121 (single-phase) and FCP 3321 (three-phase) are designed for usage with measuring equipment which is able to use I<sup>2</sup>C communication for accessing software calibration parameters stored in probe's internal EEPROM memory.



*SymmProFlex® FCP 3321 with WS (Working Standard) output connector*

## ⇒ Available Models

Models with software calibration:

Model	Phases	Class	Sensor Cable	Model	Phases	Class	Sensor Cable
FCP 3121C	1	0.2	∅ 6 mm	FCP 3321C	3	0.2	∅ 6 mm
FCP 3121D	1	0.5	∅ 6 mm	FCP 3321D	3	0.5	∅ 6 mm
FCP 3121P	1	1.0	∅ 6 mm	FCP 3321P	3	1.0	∅ 6 mm

## ⇒ Technical Specification

General Parameters	
Basic Frequency	40 Hz .. 70 Hz
Working Frequency (3dB) *	0.8 Hz .. 50 kHz
Gain *	1 mV/A & 100 mV/A
Measuring Range (crest factor <1.5 @ Basic Frequency)	1 .. 6000 A
Output Voltage Maximum	± 4.5 V peak
Peak di/dt	20 A/μs
Operating / Test Voltage Signal Cable and coupling area	600 V / 2 kV
Output to Earth Voltage	30 V max.
Safety	EN 610010-1, 600V
EMC	EN 61326:1998
Load Resistance	≥ 1 kΩ
Operating Temperature	-20 .. +60 °C
Storage Temperature	-20 .. +60 °C
Weight of electronics	Approx. 100 g
Size of electronics (L x W x H)	50 x 40 x 25 mm (FCP 3x21)
Power Supply	External 5 V
Consumption	Approx. 50 mA/phase
Output Connection	OEM (output, supply, I <sup>2</sup> C control) * WS (Working Standard connector) *

Accuracy Specifications	FCP 3x21C	FCP 3x21D	FCP 3x21P
Amplitude gain error **	<0.2 %	<0.5 %	<1 %
Phase error **	<0.1 °	<0.3 °	<0.3 °
Influence of Current outside closed Sensor Cable	<0.1 %	<0.3 %	<0.5 %
Gain TC	<0.02 %/K	<0.05 %/K	
Linearity	<0.01 %		
Distortion	<0.01 %		
Output DC Offset	<0.1 mV		
Influence of Potential of adjacent conductor (@50Hz)	<1 μA/V		
Input Noise (f<10Hz)	12 mARMS		

\*\* Basic Frequency Range @ 25 °C, current > 100 mA, except 25 mm coupling area

\*\*\* FCP category C is available only in version xx10 (sensor cable ∅ 12.6 mm)

Measuring Head Parameters	
Sensor Cable Length *	500 mm
Sensor Cable Diameter / Minimum Bend Radius	6 mm / 20 mm
Signal Cable Diameter	4 mm
Signal Cable Length *	1500 mm

Options
<ul style="list-style-type: none"> <li>• OEM Cable Output</li> <li>• Calibration Kit</li> <li>• Special Cable Lengths and/or Gains on request</li> </ul>

\* Optional Specification

## ⇒ Ordering Information

FCP xy1zp / SeCL / SiCL / MaxI / OutC	
<p><b>x</b> ..... calibration type: <b>3</b> (=software)</p> <p><b>y</b> ..... number of phases : <b>1</b> or <b>3</b></p> <p><b>z</b> ..... <b>1</b> (=6 mm)</p> <p><b>p</b> ..... class : <b>C</b> (=0.2%/0.1°), <b>D</b> (=0.5%/0.3°) or <b>P</b> (=1%/0.3°)</p> <p><b>SeCL</b> .... sensor cable length [mm]</p> <p><b>SiCL</b> .... signal cable length [mm]</p> <p><b>MaxI</b> .... maximal current [A]</p> <p><b>OutC</b> .... output connection (<b>OEM</b> or <b>WS</b>)</p>	<p><b>Default configurations:</b></p> <p><b>FCP 3121p / 500 / 1500 / 6000 / OEM</b></p> <p><b>FCP 3321p / 500 / 1500 / 6000 / OEM</b></p>