For one of our application, we need to find current sensors that must have these characteristics:

- One current sensor with:

Bandwidth	3500Hz
Nominal current	1A and 5A
Nominal frequency	50Hz and 60Hz
Temperature range	-40°C to +85°C
Withstand	Sine wave of: • $12.5A_{RMS}$ 50Hz permanently • $50A_{RMS}$ 50Hz during 5s
Dynamic range	$\pm 15A_{PEAK}$
Accuracy (1)	Applicable over the temperature range and at nominal frequency ±1% of: • Amplitude error < 0.2%, phase error < 0.167° between 12.5mA and 50mA • Amplitude error < 0.1%, phase error < 0.08° between 50mA and 10A
Frequency response	0Hz: amplitude error between -100% and +1% 1Hz: amplitude error between -15% and +1%, phase error < 22° Harmonics 2 to 4: amplitude error < 1%, phase error < 1° Harmonics 5 to 6: amplitude error < 2%, phase error < 2° Harmonics 7 to 9: amplitude error < 4%, phase error < 4° Harmonics 10 to 13: amplitude error < 8%, phase error < 8° Harmonics > 13: amplitude error between -100% to +8%

(1) If necessary, a digital current/frequency/temperature-dependent calibration system could be used to achieve these accuracy figures. In any cases, the sensor shall exhibit a linear transfer function in the ranges of interest to reduce the complexity of the calibration process

- A second sensor with:

Nominal current	1A and 5A
Nominal frequency	50Hz and 60Hz
Temperature range	-40°C to +85°C
Withstand	Sine wave of: • $20A_{RMS}$ 50Hz permanently • $150A_{RMS}$ 50Hz during 5s • $500A_{RMS}$ 50Hz during 1s • $1250A_{RMS}$ 50Hz during 10ms
Dynamic range	$\pm 430A_{PEAK}$
Accuracy (1)	Applicable over the temperature range and at nominal frequency -4%/+2% of: • Amplitude error < 0.1%, phase error < 0.08° at 1A and 5A
Transient error limit under the specified operating cycle condition	AC component error peak of 6% in respect with CEI 61869-2 with: • Ksscs = 30 • t’ = 160ms • tfr = 300ms • t’’ = 300ms • t’al = 160ms • t’’al = 300ms • Tp = 180ms

(1) If necessary, a digital current/frequency/temperature-dependent calibration system could be used to achieve these accuracy figures. In any cases, the sensor shall exhibit a linear transfer function in the ranges of interest to reduce the complexity of the calibration process