

TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING
IEC 61869-2:2012-09, Edition 1.0
Instrument Transformers – Part 2: Additional Requirements for current transformers

“R”	Required
“S”	May be subcontracted, see OD 2012
“SPTL”	Specialized Facility, see IECEE 02-2
“W”	Witness testing in the categories “MED” and “MEAS”
“3PPS”	Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.2.2	Temperature Rise Test	Current/voltage source Current measuring system The temperature data acquisition system Microohmmeter Rated burden	R
7.2.3	Impulse voltage withstand test on primary terminals	Impulse voltage source Voltage measurement system	R
7.2.6.201	Test for ratio error and phase displacement of measuring current transformers	Sinusoidal current source Adjustable burdens High accuracy standard current transformer Current measuring instrument	R
7.2.6.202	Determination of the instrument security factor (<i>FS</i>) of measuring current transformers	Indirect test method: Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument or Direct test method: Sinusoidal current source Linear burden High accuracy standard current transformer	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.2.6.203	Test for composite error of class P and PR protective current transformers	Ammeter Direct test method: Sinusoidal current source Burden High accuracy standard current transformer Ammeter or Indirect test method: Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument	R
7.2.6.204	Test for error at limiting conditions for class TPX,TPY and TPZ protective current transformers	(1) Indirect test method: A.C. method: Sinusoidal voltage source R.m.s voltage measuring instrument Peak reading current measuring instrument or D.C. method: D.C. voltage source Instantaneous current measuring instrument Flux measuring instrument or Capacitor discharge method: Regulator transformer Capacitor Instantaneous current measuring instrument Instantaneous voltage measuring instrument Flux measuring instrument (2) or Direct test method: Short-circuit current source	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
		Primary current measuring instruments Burden A.c. component of instantaneous current error measuring instruments Flux measuring instrument	
7.2.6.205	Test of low-leakage reactance type for class PX and PXR protective current transformers	Sinusoidal current source Burden High accuracy standard current transformer Ammeter Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument	R
7.2.6.206	Determination of the remanence factor class PR,TPY, and PXR protective current transformers	A.C. method: Sinusoidal voltage source Voltage waveform measuring instrument Current waveform measuring instrument or D.C. method: D.C. voltage source Instantaneous current measuring instrument Flux measuring instrument or Capacitor discharge method: Regulator transformer Capacitor Instantaneous current measuring instrument Instantaneous voltage measuring instrument Flux measuring instrument	R
7.2.201	Short-time current tests	Short circuit current generating system Measurement control system	R
7.3.1	Power-frequency voltage withstand tests on primary terminals	Power-frequency voltage source Voltage measurement system	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.3.5.201	Tests for ratio error and phase displacement of measuring current transformers	Sinusoidal current source Adjustable burdens High accuracy standard current transformer Current measuring instrument	R
7.3.5.202	Tests for ratio error and phase displacement of class P and PR protective current transformers	Sinusoidal current source Adjustable burdens High accuracy standard current transformer Current measuring instrument	R
7.3.5.203	Test for composite error of class P and PR protective current transformers	Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument	R
7.3.5.204	Test for ratio error and phase displacement for class TPX, TPY and TPZ protective current transformers	Sinusoidal current source Adjustable burdens High accuracy standard current transformer Ammeter Temperature sensor	R
7.3.5.205	Test for error at limiting conditions for class TPX,TPY and TPZ protective current transformers	A.C. method: Sinusoidal voltage source R.m.s voltage measuring instrument Peak reading current measuring instrument or D.C. method: D.C. voltage source Instantaneous current measuring instrument Flux measuring instrument or Capacitor discharge method: Regulator transformer Capacitor Instantaneous current measuring instrument Instantaneous voltage measuring instrument Flux measuring instrument	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.3.5.206	Test for turns ratio error for class PX and PXR protective current transformers	Sinusoidal current source Adjustable burdens High accuracy standard current transformer Current measuring instrument	R
7.3.201	Determination of the secondary winding resistance (R_{ct})	Resistance meter Temperature sensor	R
7.3.202	Determination of the secondary loop time constant (T_s)	A.C. method: Sinusoidal voltage source R.m.s voltage measuring instrument Peak reading current measuring instrument Resistance meter or D.C. method D.C. voltage source Instantaneous current measuring instrument Flux measuring instrument Resistance meter or Capacitor discharge method: Regulator transformer Capacitor Instantaneous current measuring instrument Instantaneous voltage measuring instrument Flux measuring instrument Resistance meter or through measuring phase displacement Sinusoidal current source Adjustable burdens High accuracy standard current transformer Current measuring instrument	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.3.203	Test for rated knee point e.m.f. (E_k) and exciting current at E_k	Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument	R
7.3.204	Inter-turn overvoltage test	Procedure A: Sinusoidal voltage source R.m.s current measuring instrument Peak reading voltage measuring instrument Procedure B: Adjustable frequency sinusoidal voltage source Peak reading voltage measuring instrument R.m.s current measuring instrument	R
7.4.3	Measurement of capacitance and dielectric dissipation factor	Power-frequency voltage source Voltage measurement system Capacitance and dielectric dissipation factor measuring instrument Coupling capacitor	R
7.4.6	Internal arc fault test	Short circuit current generating system Measurement control system	S
7.5.1	Determination of the remanence factor	A.C. method: Sinusoidal voltage source Voltage waveform measuring instrument Current waveform measuring instrument or D.C. method: D.C. voltage source Instantaneous current measuring instrument Flux measuring instrument or Capacitor discharge method:	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
		Regulator transformer Capacitor Instantaneous current measuring instrument Instantaneous voltage measuring instrument Flux measuring instrument	
7.5.2	Determination of the instrument security factor (<i>FS</i>) of measuring current transformers	Indirect test method: Sinusoidal voltage source R.m.s voltage measuring instrument R.m.s current measuring instrument	R

Note: This equipment list applies for high voltage products.