



ECIT



Digital instrument transformers



enip2.com

ECIT is a series of single-phase combined instrumental digital current and voltage transformers with the following features and advantages:

- The ECIT primary sensors are free of saturation, residual magnetization and ferroresonance. This ensures accurate current measurements across the entire electrodynamic range.
- ECIT performs high accuracy class at wide current and voltage ranges: 0.5/3P accuracy class in voltage measurements and 0.5S/5PR400(500) accuracy class in current measurements.
- ECIT provides minimum angular error between current and voltage phasors, which improves the performance of digital protection relays and control.
- ECIT uses a special digital filter to compute current synchrophasors (the measurement time is 11...16 ms) taking into account the characteristics of Rogowsky coil.
- ECIT publishes two sampled values streams and one synchrophasors (SP) stream to the process bus. Using SP stream lets reduce the network load and accelerates operating speed of protection IED.

There are three ECIT modifications differing by design and technical performance: ECIT-1 for AIS, ECIT-2 for AIS up to 4000 A, and ECIT-3 for GIS



ECIT-1



ECIT-2



ECIT-3

Parameters for Application		
Rated primary voltage of application	up to 15 kV	up to 15 kV
Rated primary current of application	up to 1000 A	up to 1600 A
Sensors Parameters		
Rated primary voltage, Upr	(3...16)/√3 kV	(3...16)/√3 kV
Highest voltage for equipment, Um	17.5 kV	17.5 kV
Rated power frequency withstand voltage	42 kV	42 kV
Rated lightning impulse withstand voltage	75 kV	75 kV
Rated primary current, Ipr	50 A	50 A
Rated continuous thermal current, Icth	1000 A	1600 A
Rated extended primary current, Iepr	1000 A	1600 A
Rated short-time thermal current, Ith	20 kA/1 s	25 kA/3 s
Rated dynamic current, Idyn	51 kA	63 kA
Voltage accuracy class	0.5/3P	0.5/3P
Current accuracy class	0.5S/5PR400*	0.5S/5PR500*
* - the maximum amplitude value of the measured current is 41 kA (free of saturation), for class 5PR TVE is 0.5		
Interfaces		
Ports	2 × 100Base-TX or 2 × 100Base-FX (LC, multi-mode, 62,5/125, 50/125, 1300 nm); redundancy: PRP, RSTP	
Protocols	IEC 61850-9-2 (up to 2 × SV80/240(SV96/288), 1 × SP (50/100/200/400...4800 fps)), IEEE C37.118.2 (1...400 fps), IEC 61850-8-1 GOOSE, IEC 60870-5-104, Modbus TCP; web interface	
Time sync		
	PTPv2 (IEC 61850 9-3), IRIG-A or 1PPS over RS-485	
Power supply		
Voltage and power	18...36 VDC (10 W)	
Operating conditions and Design		
Operating conditions	-25...+40 °C, RH – up to 98 % (+25 °C), 84...106.7 kPa, 1000 m MSL	
Design	143 × 136 × 270 mm, ≤ 5 kg	224 × 148 × 210 mm, ≤ 15 kg
Design		240 × 100 × 245 mm, ≤ 5 kg
Order code		

ECIT-1-15-50(1000)-24-TX2-R1
ECIT-1-15-50(1000)-24-FX2-R1

ECIT-2-15-50(1600)-24-TX2-R1
ECIT-2-15-50(1600)-24-FX2-R1

ECIT-3-20-50(630)-24-TX2-R1
ECIT-3-20-50(630)-24-FX2-R1

Sampled values (4000, 4800, 12000, 14400) of current and voltage are published in accordance with IEC 61869-9 to the local network of the electrical installation Ethernet («process bus»). The sampled values subscribers are digital relay protection terminals, digital electricity meters, and electric power quality control systems.

ECIT can be connected to the process bus of a substation with RSTP or PRP redundancy, as well as directly to measuring and protection devices.

ECIT has built-in over current protection. The PTOC output can be operate on signal (GOOSE), or built-in DO (Trip). Further more, the using of synchrophasors data generated by ECIT lets to implement effective protection and automation systems (PDIS, PDIF, centralized protection, etc.) in the middle voltage switchgear.

A special versions of ECIT are available for ordering: ECIT-1 – up to 35 kV / 2500 A, ECIT-2 – up to 35 kV / 4000 A, ECIT-3 – up to 35 kV / 800 A.

