PCU1/E CIT

Primary Current Injection Systems

Features (CIT & PCU1/E)

- 6.9kVA output capability
- Continuously variable output
- Multi-function digital timing system
- Digital true RMS memory ammeter
- Automatic switch-off at end of test
- Loading units from 500A-3000A
- Low impedance, dual-range outputs
- Rugged, compact design

PCU1/E Additional Features

- Secondary injection up to 100A
- Digital true RMS voltmeter

The CIT & PCU1/E Mk5 primary current injection systems are ideally suited to commissioning and maintenance testing where high currents up to 3000A are required. The systems consist of separate control and loading units for maximum flexibility. The control unit contains all controls and displays, linking to the loading unit by control and metering cables. The combination of the CIT or PCU1/E and a suitable loading unit is ideal for all low power primary current injection tasks up to 3000A, including testing under and over current relays, circuit breakers and CT ratio testing. Where higher power is required, the PCU2/E and associated loading units can inject currents up to 6000A at 20kVA.

Feature	CIT	PCU1/E
Primary injection	ü	ü
Secondary injection	û	ü

Four loading units are available, delivering output currents between 250A and 3000A. Each loading unit has two outputs which may be connected in series or parallel for maximum flexibility. For example, the LU3000LP may be configured to either give a maximum current of 1500A at 4V or 3000A at 2V. A full range of output leads are available to complement the CIT, PCU1/E and loading units.

The control units are rated at 6.9kVA, and have digital metering. A memory facility is provided on the metering to hold the current reading when the output trips or is switched off. The current is automatically switched off when the device under test trips.

The CIT & PCU1/E have a flexible timing system, allowing timing tests to be carried out to a resolution of 1ms. Selection for normally open or normally closed contacts is automatic, and the status of the contacts is shown on the front panel. Timing modes are available to test under and over current devices, re-closers, under and over voltage devices, and many current trips and circuit breakers.

CIT
Control Unit

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CIT / PCU1/E Control Unit Specification

Loading Unit Output

Voltage	Current (cont.)	Current (5 min on/15 off)
0-230V	0-15A	0-30A

Loading Unit Current Metering

The AC output current is metered by a true RMS 4 digit memory ammeter (acquisition time 200ms) with an LED display.

Loading unit	Full scale	Resolution	Accuracy
LU500	500.0A	0.1A	±0.6%rdg+6d
LU1000	1000A	1A	±0.6%rdg+6d
LU2000	2000A	1A	±0.6%rdg+6d
LU3000LP	3000A	1A	±0.6%rdg+6d

Timing System

The CIT & PCU1/E have a flexible timing system with two contact inputs and 5 operating modes. Both the start and stop contact circuits will accept volt free contacts or contacts connected to a dc voltage system (220V max). Each contact circuit automatically selects for N/O or N/C contacts, and the status of each contact input is shown by an LED. The timing channels may also be triggered by a dc voltage between 24 and 240V. The timing system will also respond to the rise and fall of current in the test object for devices where no auxiliary contact is available.

Timer resolution	1ms
Timer full scale	999.999s
Timer accuracy	±0.01%rdg+2d (3d current mode)
Contact O/C voltage	24V
Contact S/C current	100mA
Vdc input range	24-240Vdc

Timer mode	Timer start	Timer stop
Internal Start	'On' button	Contact
Single contact	Contact 1	Contact 1
Dual contact	Contact 1	Contact 2
Current operated 50%	Current >10%	Current <10%
Current operated 100%	Current >20% of meter range	Current <20% of meter range
Off	Setting position	

Secondary Injection Output (PCU1/E only)

The secondary current injection output on the unit has two taps, allowing the injection of currents up to 100A.

Output Range	Continuous current	Intermittent current 5min on/15 min off
0-5V	0-50A	0-100A
0-10V	0-25A	0-50A

Metering Range	Full scale	Resolution	Accuracy
0-10V 50A	50.00A	0.01A	±0.6%rdg+6d
0-5V 100A	100.0A	0.1A	±0.6%rdg+6d

Voltage Output (PCU1/E only)**

Voltage	Current (cont.)	Current (5 min on/15 off)
0-230V	0-15A	0-25A

Voltage and current metering are provided on the voltage output with 300.0V and 30.00A full scale and ±0.6%rdg+6d accuracy.

** The PCU1/E voltage output is not isolated from the supply.

Supply Requirements

230V±10%, 45-65Hz 1ph 7.2kVA max

Dimensions

490mm x 300mm x 300mm

Weight

CIT:29kg, PCU1/E: 35kg

Temperature Range

Storage -20°C to 60°C, Operating 0°C to 45°C

Protection and Safety

The CIT, PCU1/E and loading units are CE marked and are designed to meet the requirements of BS EN61010. The system is protected by electronic trips on the outputs, circuit breakers on the mains input and control unit output, and fuses on the contact inputs.

Control Unit Standard Accessories

Mains lead (2m), loading unit power and metering leads (5m), operating manual and spare fuses.

Optional Loading Unit Specifications

Loading units are available to increase the output capabilities of the unit with a range of current ratings. The output of the loading unit is isolated, and consists of two windings which may be connected in series or parallel. All metering functions are handled by the control unit.

Loading unit intermittent ratings (5 min on/15 off)

Unit	Series connection		Parallel connection		Max
Type	Current	Voltage	Current	Voltage	kVA
LU500	0-250A	0-8V	0-500A	0-4V	2
LU1000	0-500A	0-8V	0-1000A	0-4V	4
LU2000	0-1000A	0-6V	0-2000A	0-3V	6
LU3000LP	0-1500A	0-4V	0-3000A	0-2V	6

Loading unit continuous ratings

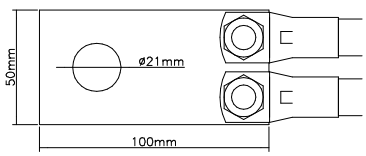
Unit	Series connection		Parallel connection		Max
Type	Current	Voltage	Current	Voltage	kVA
LU500	0-125A	0-8V	0-250A	0-4V	1
LU1000	0-250A	0-8V	0-500A	0-4V	2
LU2000	0-500A	0-6V	0-1000A	0-3V	3
LU3000LP	0-750A	0-4V	0-1500A	0-2V	3

Unit	Dimensions	Weight
LU500	290 x 320 x 425mm	29kg
LU1000	290 x 320 x 425mm	37kg
LU2000	290 x 320 x 425mm	45kg
LU3000LP	290 x 320 x 475mm	52kg

Optional Output Lead Set Specifications

A range of output lead sets are available in a range of lengths to complement the CIT / PCU1/E system:

Type	Length	CSA	Termination
500AL	1m to 5m	70mm^2	Ring crimp
1000AL	1m to 5m	140mm^2	Copper bar
2000AL	1m to 5m	280mm^2	Copper bar
3000AL-LP	1m to 2m	420mm^2	Copper bar



1000AL-3000AL copper bar termination

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