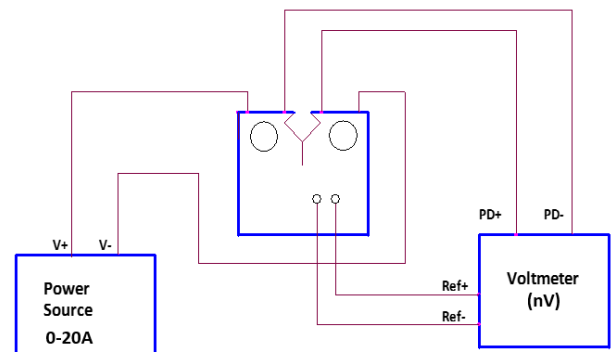


The AC-07-5000 pulsed DCPD unit is integrated with BISS 2370 Series controllers for full automated crack size measurement using the potential drop technique. Documentation provided with unit may be used to interface it with third party controllers as well.

The principle of operation of the AC-07-5000 DCPD unit is schematically described in the figure below. The circuit provides for parallel and simultaneous measurement of two potential drops, one across the crack and another on the specimen, to obtain non-dimensional estimates of potential drop per ampere of current passing through the circuit. Both values are estimated with high resolution in order of $\pm 0.01\text{mm}$ or better. A TTL logic input to the unit is used to switch the current On and Off. Application software provided with the host controller allows for selection of pulse duration and other settings. This unit can be used either with or without electrical isolation of alternate current paths.

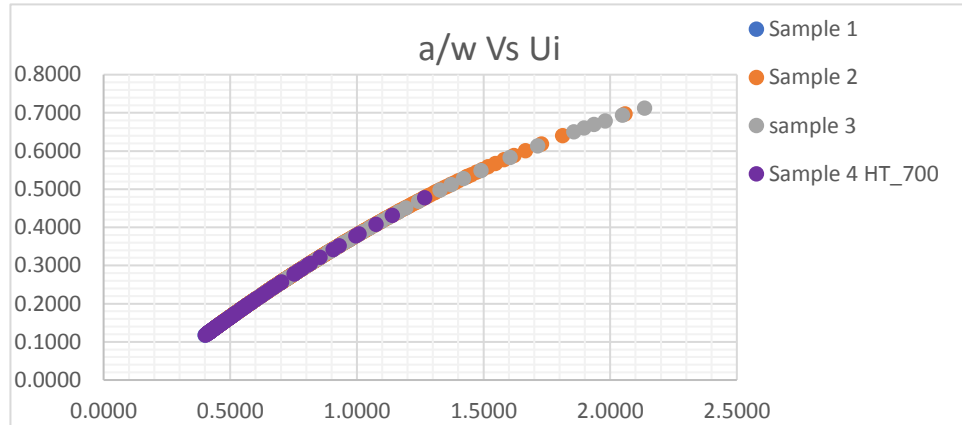
Technical features

- Variable current source up to 20 A
- Advanced filtering options
- Pulsed DCPD as a standard
- Advanced triggering including peak, through and midpoint of load cycle waveform input
- In built voltage amplifier
- Variable DC offsets for removing standing voltages
- Two channels as standard to acquire reference and specimen potential drop
- Control on current direction
- Analogue output for the DC signal
- Digital display of measured values
- Suitable for prolonged stable operation up to 1000degC for creep crack growth testing for up to 10000Hrs of testing
- DCPD system has high temperature resistant connecting cables, isolated with each other, with suitable screws for attaching to CT-specimen
- Electronically adjustable DC offsets
- Reverse and Pulsed DCPD modes
- Control through DCPD system and software
- Average crack size measurement resolution $\pm 0.01\text{mm}$
- Suitable for High Temperature applications
- Designed in accordance with ASTM – E 647 & ASTM E 1457
- The DCPD unit can be controlled in continuous or pulsed mode through software
- Electrical isolation of fixtures is not mandatory
- Completely integrated with BISS controller and software for full automated use



Applications

- Creep Crack Growth
- Fatigue crack growth
- Crack initiation
- Crack sizing
- Crack closure studies



Specimen subjected to testing using DCPD unit



Fatigue crack propagation test using DCPD unit

Specifications	
Output Current	Up to 20A
Step selection	10mA
Input ranges	0-42V
Current Stability	0.01% of set value
Modes	Reversed and Pulsed
Offset	Adjusted through software
External Sync	User defined
Output	Output is communicated through the RS232 port of Nano Voltmeter
Crack Measurement Resolution	Down to 0.01mm
Number of channels	02
Power supply	220-240v AC Mains, 50 Hz

Note 1: Optional Spot-Welding Units are available on specific request.

Note 2: Specification might change without prior notification