

MATELECT DCM-2 DCPD CRACK GROWTH MONITOR



DCM-2 FEATURES

- Capable of reverse DCPD¹.
- Advanced filtering options. The unit has highly advanced sampling and filtering options please call for details.
- High Current O/P, up to 50A¹. Variable in steps of 10mA.
- Built in scan controller¹, for direct control of high current scanners.
- Pulsed DCPD as standard.
- Advanced triggering¹, including peak, trough, and mid-point of load cycle waveform input.
- Variable DC offsets for the removal of standing voltages.
- Two channels as standard, reference and specimen.

Applications

- Slow crack growth
- Crack sizing
- Dynamic crack growth studies
- Crack closure studies
- Crack initiation
- Fatigue crack initiation
- Condition monitoring
- Stress corrosion testing

The DCM-2 is a modern microprocessor based instrument for measuring crack depth in metals undergoing materials testing. Building on the success of the DCM-1 this new unit takes on board customer comments and suggestions, as shown in its impressive features list. It utilises the pulsed direct current potential drop method (DCPD) which is an established technique covered by the ASTM 647 standard. The technique involves passing a constant current through the metal under test and measuring the resultant voltage drop that is created across the specimen. The presence of a growing defect will alter this voltage and by suitable calibration, a measure of the defect depth can be obtained.

¹ dependent on model purchased.

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DCM-2 SPECIFICATIONS

DCM-2 Model range.	
Option1	10A maximum current output.
Option2	10A maximum current output, with Advanced triggering
Option3	10A maximum current output, with Advanced triggering, and 20 volt output supply
Option4	50A maximum current output.
Option5	50A maximum current output, with Advanced triggering
Option6	50A maximum current output, with Advanced triggering and reversing output current
Other Configurations are available please call for a quote	

Specifications	
Current O/P	High stability (better than 0.01%) continuously variable current supply. Continuously variable in 10mA increments. No minimum load required.
Input ranges	+/-4500 μ V with a resolution of 0.1 μ V. +/-450 μ V with a resolution of 0.01 μ V. +/-45 μ V with a resolution of 1nV.
Offset	+/- 4.5mV with respect to input signal. Adjustable in 1 μ V steps.
Filters	User definable filtering with 3 pre-defined settings.
External sync	Input voltage range, Max +/-20V Min +/-150mV Frequency range, Max 500Hz Min 0.6Hz Unit will trigger on peak, trough or mid-point of load cycle waveform input.
Display	Large 240*128 back-lit LCD displaying all user definable settings. As well as the X, Y and X/Y signals.
Outputs	Separate analogue O/P's of X, Y and X/Y signals. (BNC) Digital O/P of all set and displayed values. (Via RS-232)
Connectors	Current O/P 2-way and 3-way Lemo (2B size) Signal I/P X and Y 2-way Lemo (0B size) Analogue signal out X, Y & X/Y: BNC Ext sync BNC RS232 9-pin male D-type USB Type B
EMC and Safety	Conforms to all relevant European directives.
Power supply	110-120V or 220-240v (Switch selectable) AC Mains, 50 or 60Hz. Mains input via earthed and fused IEC connector.
Line Fuses	Two 20mm anti surge 3Ampere fuse.
Mechanical	Frame made of aluminium extrusions and die-cast pieces, covers made of zinc-plated steel. All finished in a RAL epoxy powder coat. Optional 19" rack mountable handles.
Dimensions / Weight	450mm wide x 340mm deep x 145mm high. Net weight 12Kg.
Operating Environment	Indoor use only 0°-35°C main unit. LCD 10°-30°C. A 30 minutes warm up time is recommended. Pollution Degree 1 environment (no pollution, or only dry non-conductive pollution) Humidity 20% -80% RH (non-condensing).

*Total current output is dependent on model purchased.

Available accessories and options on all models.	
INTERNAL PRE-AMP	Internal Preamplifier providing 2 extra concurrent inputs.
EXTERNAL PRE-AMP	External Preamplifier. (Availability TBA)
INTERNAL SC1-HC	Scanner control with 25-way male D-type for SM system, 2x BNC to give analogue position of current and signal channels.
EXTERNAL SM1-HC	4 dual channel signal switching unit.
EXTERNAL SM2-HC	4 channel current switching unit. (50amp compliant)
19" rack mounting	Rack mounting kit, please state when ordering.

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