

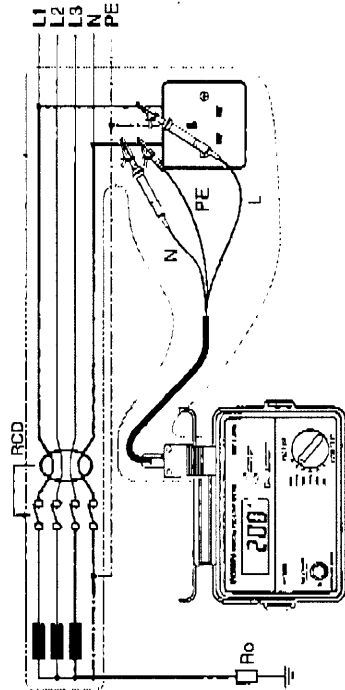
2.3 Principles of the measurement of line impedance and prospective short circuit current

Line impedance on a single phase system is the impedance measured between phase and neutral terminals.

Measurement principles for line impedance are exactly the same as for earth fault loop impedance measurement with the exception that the measurement is carried out between phase and neutral.

The protective short circuit or fault current at any point within an electrical installation is the current that would flow in the circuit if no circuit protection operated and a complete (very low impedance) short circuit occurred.

The value of this fault current is determined by the supply voltage and the impedance of the path taken by the fault current. Measurement of prospective short circuit current can be used to check that the protective devices within the system will operate within safety limits and in accordance with the safe design of the installation. The breaking current capacity of any installed protective device should be always higher than the prospective short circuit current.



3. Specifications

- **Measurement Specification**

Loop Impedance

Range	Measuring range	Nominal test current at 0Ω external loop/Period applied	Intrinsic Accuracy
20Ω	0.00 - 19.99Ω	25A / 20ms	±(2%rdg + 3dgt)
200Ω	0.0 - 199.9Ω	2.3A / 40ms	
2000Ω	0 - 1999Ω	15mA / 280ms	

Prospective Short-circuit Current (KMP4120DL, KMP4118DL)

Range	Measuring range	Nominal test current at 0Ω external loop/Period applied	Intrinsic Accuracy
200A	0.0 - 199.9A	2.3A / 40ms	PSC accuracy is derived from the loop impedance accuracy
2000A	0 - 1999A	25A / 20ms	
20kA	0.00 - 4.00kA	25A / 20ms	

Voltage

Measuring range	Intrinsic Accuracy
180 - 260V	± (2%rdg + 2dgt)

Reference Conditions

- Ambient Temperature: 23±5°C
- Relative Humidity: 60±15%
- Nominal System Voltage and Frequency: 230V, 50Hz
- Altitude: Less than 2000m

Operating Error


Loop Impedance

Range	Operating Range Compliant with EN61557-3 Operating Error
20 Ω	0.35 to 19.99 Ω
200 Ω	20.0 to 199.9 Ω
2000 Ω	200 to 1999 Ω

The influencing variations used for calculating the Operating Error are:

- Ambient Temperature: 0°C and 35°C
- Phase angle: 0° to 18°
- System frequency: 49.5Hz to 50.5Hz
- System voltage: 196V to 253V

General Specification

- Storage Temperature: -5°C to 60°C
- Storage Humidity: 85% maximum
- Dimensions: 175 X 115 X 85.7 mm
- Weight: KMP4118DL/KMP4116DL - 500g
KMP4120DL - 700g
- Maximum altitude: 2000m
- Over Range indication: "OL"
- Input Voltage greater than 260V indication: "VP-E HI"
- Over Temperature Indication: 

Applied Standards

Instrument operating standard - IEC/EN 61557-1,
IEC/EN 61557-3

Safety standard - IEC/EN 61010-1, CAT III (300V)
- instrument
Protection degree - IEC 60529 (IP40)

Accessories

- KAMP10 Mains test lead with IEC Connector
- SLP5 Earth probe
- SL16E Distribution board fused test lead (Fuse: 10A/600V fast acting ceramic)
- Test lead carry pouch

Model	KMP 4120DL	KMP 4118DL	KMP 4116DL
D-Lok Circuit*	✓	X	X
Loop 0-19.99Ω/ 0-199.9Ω/0-1999 Ω	✓	✓	✓
PSC 0-199.9A/ 0-1999A/0-4.00kA	✓	✓	X
Mains Lead for Sockets KAMP10	✓	✓	✓
External Earth Probe SLP5	✓	✓	✓
Distribution Board Lead SL16E	✓	✓	X

*D-Lok does not operate on the 2000 Ω ranges

This manual and product may use the following symbols adopted from International Safety Standards.

- ☐ Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION.
- ⚠ Caution, risk of electric shock.
- ⚠ Caution (refer to accompanying documents)