



VKL22F RCBO 2P



VKL22-40F RCBO 4P



VKL22-63F RCBO 4P

Application

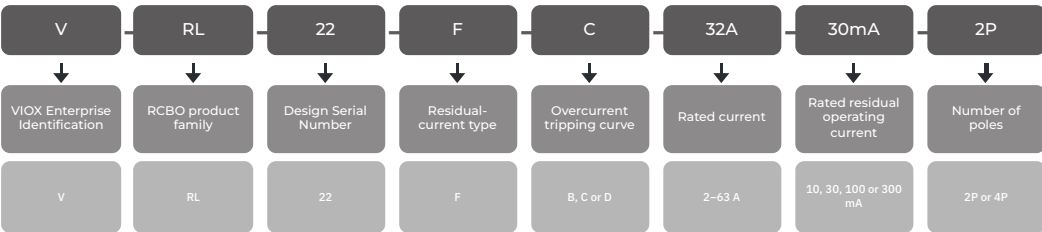
The VRL22F Type F Residual Current Circuit Breaker with Overcurrent Protection provides residual-current, overload and short-circuit protection for AC 50/60 Hz electrical circuits. It detects sinusoidal AC, pulsating DC and mixed-frequency residual currents up to 1 kHz, making it suitable for circuits supplying equipment with single-phase frequency inverters. The device maintains its normal protective functionality in the presence of superimposed smooth DC residual current up to 10 mA. Smooth DC fault current itself is not detected. Suitable applications include washing machines, dishwashers, heat pumps, air conditioners, lighting control equipment, power tools and other inverter-controlled loads used in residential, commercial and light industrial installations. Available in 2P and 4P configurations, with rated voltages of 230/240 V AC or 400/415 V AC and rated currents from 2 A to 63 A.

Product Features

- Designed according to IEC/EN 61009-1 and IEC/EN 62423, with voltage-independent electromagnetic operation.
- Available in 2P and 4P configurations, rated from 2 A to 63 A with B, C and D curves and 6 or 10 kA breaking capacity.
- Detects sinusoidal AC, pulsating DC and mixed-frequency residual currents up to 1 kHz while maintaining functionality with up to 10 mA superimposed smooth DC.
- Short-time-delayed operation with 3 kA surge-current immunity, IP20 protection and top or bottom power entry.

Ordering Code

MODEL CONFIGURATION REFERENCE



Basic Parameters

Item	Specification
Residual-current type	Type F
Model designation	VRL22F (2P, up to 63 A); VRL22-40F (4P, up to 40 A); VRL22-63F (4P, up to 63 A)
Number of poles	2P; 4P
Design standards	IEC/EN 62423; IEC/EN 61009-1; OVE E 8601
Current test markings	As printed on the device
Rated voltage (Ue)	2P: 230/240 V AC; 4P: 400/415 V AC
Rated frequency	50/60 Hz
Mode of operation	Voltage-independent
Test-circuit voltage range	2P: 184-264 V AC; 4P: 184-440 V AC
Rated current (In)	2, 4, 5, 6, 8, 10, 13, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 60, 63 A
Overcurrent tripping curve	B: 3-5 In; C: 5-10 In; D: 10-20 In
Rated residual operating current (IΔn) - K short-time delayed (G, ASi)	10 mA (2P, up to 32 A only); 30, 100, 300 mA
Residual-current sensitivity	Sinusoidal AC and pulsating DC residual currents; mixed-frequency residual currents up to 1 kHz
Superimposed smooth DC	Standard functionality maintained with superimposed smooth DC up to 10 mA; smooth DC fault currents are not detected
Rated insulation voltage (Ui)	500 V
Rated impulse withstand voltage (Uimp)	4 kV (1.2/50 μs)
Rated conditional short-circuit current (Isc)	6,000 A or 10,000 A; energy-limiting class 3 for B and C curves
Rated making and breaking capacity (Im)	3,000 A
Peak withstand current	3 kA (8/20 μs)
Electrical isolation	> 4 mm contact gap
Electrical endurance	≥ 5,000 operating cycles
Mechanical endurance	≥ 5,000 operating cycles
Degree of protection	IP20
Terminal type	Open-mounted / lift terminals
Terminal capacity	1-25 mm²
Terminal tightening torque	2-2.5 N·m

Basic Parameters

Item	Specification
Busbar thickness	0.8-2 mm
Operating temperature	-25 °C to +55 °C
Storage and transport temperature	-40 °C to +70 °C
Resistance to climatic conditions	IEC/EN 61009
Contact-position indicator	Mechanical red/green indicator
Power entry	Top or bottom
Mounting position	Any position

VRL22 RCBO - Overcurrent Protection Characteristics

No.	Rated Current In (A)	Initial State	Test Current	Specified Time	Expected Result	Remarks
a	2-63	Cold state	1.13 In	t ≥ 1 h	Non-tripping	
b	2-63	Immediately after test a	1.45 In	t < 1 h	Tripping	Increase to the specified current within 5 s after test a.
c	2-63	Cold state	2.55 In	1 s < t < 60 s	Tripping	
d	2-63	Cold state	3 In	t ≥ 0.1 s	Non-tripping	Curve B
d	2-63	Cold state	5 In	t < 0.1 s	Tripping	Curve B
d	2-63	Cold state	5 In	t ≥ 0.1 s	Non-tripping	Curve C
d	2-63	Cold state	10 In	t < 0.1 s	Tripping	Curve C

Note: The source basic-parameter table lists B, C and D curves; the supplied overcurrent test table provides instantaneous criteria only for B and C curves.

Outline and Installation Dimensions (mm)

