



VKL22B RCBO 2P



VKL22-40B RCBO 4P



VKL22-63B RCBO 4P

Application

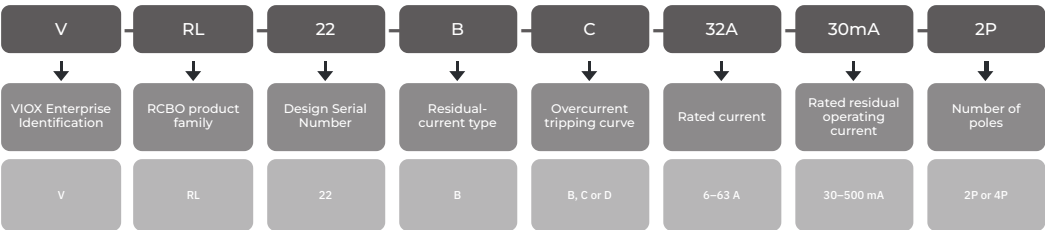
The VRL22B Type B / B+ Residual Current Circuit Breaker with Overcurrent Protection provides residual-current, overload and short-circuit protection for AC 50/60 Hz electrical installations. Type B detects sinusoidal AC, pulsating DC and smooth DC residual currents, including residual-current frequencies up to 1 kHz. Type B+ provides the complete Type B detection capability and extends the frequency range up to 20 kHz, with additional tripping values below 420 mA. Suitable for installations incorporating frequency converters, photovoltaic and UPS systems, medical equipment, elevator controllers, trace-heating systems and variable-speed machinery. Available in 2P and 4P configurations with rated voltages of 230/240 V AC and 400/415 V AC, and rated currents from 6 A to 63 A.

Product Features

- Compliant with IEC/EN 61009-1 and IEC/EN 62423; Type B+ additionally complies with VDE 0664-400.
- Available from 6 A to 63 A with B, C and D tripping curves and 6 kA or 10 kA conditional short-circuit ratings.
- Type B detects residual-current frequencies up to 1 kHz, while Type B+ extends detection up to 20 kHz.
- Instantaneous, K short-time-delayed and S selective versions are available with variant-specific residual-current ratings.

Ordering Code

MODEL CONFIGURATION REFERENCE



Basic Parameters

Parameter	Type B	Type B+
Product family / frame	VRL22B: 2P up to 63 A VRL22-40B: 4P up to 40 A VRL22-63B: 4P up to 63 A	Same VRL22B frame family; Type B+ variant
Applicable standards	IEC/EN 62423; IEC/EN 61009-1; OVE E8601	IEC/EN 62423; IEC/EN 61009-1; OVE E8601; VDE 0664-400
Rated voltage (Ue)	2P: 230/240 V AC 4P: 400/415 V AC	2P: 230/240 V AC 4P: 400/415 V AC
Rated frequency	50/60 Hz	50/60 Hz
Mode of operation	Type A functionality: voltage-independent Type B functionality: voltage-dependent	Type A functionality: voltage-independent Type B+ functionality: voltage-dependent
Electronic operating voltage	50–264 V AC	50–264 V AC
Test-circuit voltage range	2P: 184–264 V AC 4P: 184–440 V AC	2P: 184–264 V AC 4P: 184–440 V AC
Rated current (In)	6, 10, 13, 15, 16, 20, 25, 32, 40, 50, 63 A	6, 10, 13, 15, 16, 20, 25, 32, 40, 50, 63 A
Tripping curves	B (3–5 In); C (5–10 In); D (10–20 In)	B (3–5 In); C (5–10 In); D (10–20 In)
Rated insulation voltage (Ui)	500 V	500 V
Rated impulse withstand voltage (Uimp)	4 kV (1.2/50 µs)	4 kV (1.2/50 µs)
Rated conditional short-circuit current (Inc)	6 kA or 10 kA; energy-limiting class 3 for B and C curves	6 kA or 10 kA; energy-limiting class 3 for B and C curves
Rated making and breaking capacity (Im)	3,000 A	3,000 A
Peak withstand current	3 kA (8/20 µs); 5 kA (8/20 µs) for Type S	3 kA (8/20 µs); 5 kA (8/20 µs) for Type S
Electrical isolation	> 4 mm contact gap	> 4 mm contact gap
Electrical endurance	≥ 5,000 operating cycles	≥ 5,000 operating cycles
Mechanical endurance	≥ 5,000 operating cycles	≥ 5,000 operating cycles
Degree of protection	IP20	IP20
Terminal type	Open-mounted / lift terminals	Open-mounted / lift terminals
Terminal capacity	1–25 mm²	1–25 mm²
Terminal tightening torque	2–2.5 N·m	2–2.5 N·m
Busbar thickness	0.8–2 mm	0.8–2 mm
Operating temperature	–25 °C to +55 °C	–25 °C to +55 °C
Storage and transport temperature	–40 °C to +70 °C	–40 °C to +70 °C
Resistance to climatic conditions	IEC/EN 61009	IEC/EN 61009

Residual-Current Detection

Variant	Residual-Current Detection	Frequency Range	Additional Characteristic
Type B	Sinusoidal AC, pulsating DC and smooth DC residual currents	Up to 1 kHz	Universal current-sensitive RCBO
Type B+	Full Type B residual-current detection capability	Up to 20 kHz	Additional tripping values below 420 mA, as specified by VDE 0664-400

Overcurrent Protection Characteristics

No.	Rated Current In (A)	Initial State	Test Current	Specified Time	Expected Result	Remarks
a	6–63	Cold state	1.13 In	t ≥ 1 h	Non-tripping	
b	6–63	Immediately after sequence a	1.45 In	t < 1 h	Tripping	Increase to the specified current within 5 s after test item a.
c	6–63	Cold state	2.55 In	1 s < t < 60 s	Tripping	
d	6–63	Cold state	3 In	t ≥ 0.1 s	Non-tripping	Curve B
d	6–63	Cold state	5 In	t < 0.1 s	Tripping	Curve B
d	6–63	Cold state	5 In	t ≥ 0.1 s	Non-tripping	Curve C
d	6–63	Cold state	10 In	t < 0.1 s	Tripping	Curve C

Residual-Current Breaking Times

Rated Current In (A)	Rated IΔn (A)	At IΔn (s)	At 2 IΔn (s)	At 5 IΔn (s)	At 5, 10, 20, 50, 100, 200 or 500 A (s)	At IΔt (s)
6–63	0.03, 0.1, 0.3, 0.5	0.10	0.05	0.04	0.04	0.04

Outline and Installation Dimensions (mm)

