

# KWBNL-32 Series Miniature Circuit Breakers Incorporating Residual Current Protection



Kawamura

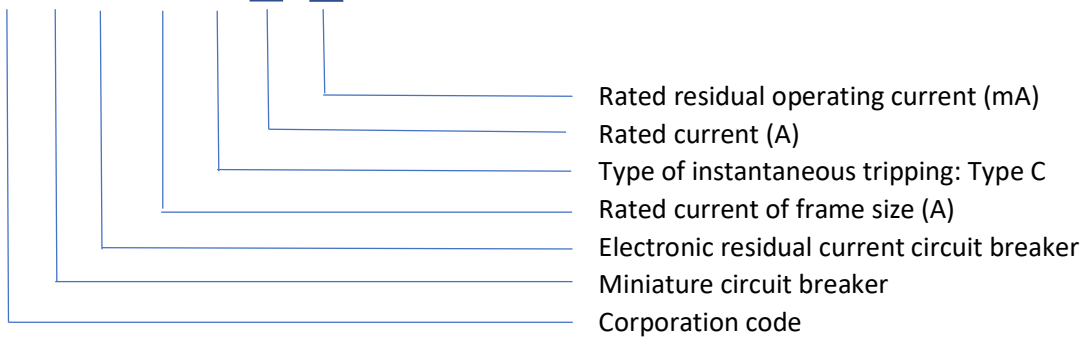
## 1. Application scope

KWBNL-32 series miniature circuit breakers incorporating residual current protection (hereinafter referred to as RCBOs) are suitable to be used in the circuits with rated operational voltage of 240 V, a.c. 50 Hz, and rated current up to 20 A. They are primarily intended to provide indirect contact protection for human, and overcurrent protection for the circuits of buildings and similar use, and also to provide protection against fire hazards due to a persistent earth fault current, without the operation of the overcurrent protective device. The products conform to the standards of IEC 61009-1, GB 16917.1



## 2. Type designation and meaning

**KW B NL - 32 / C** □ / □



## 3. Normal operation and Installation conditions

- The ambient air temperature is between  $-5^{\circ}\text{C}$  and  $+40^{\circ}\text{C}$ , and the average temperature of 24 hours does not exceed  $35^{\circ}\text{C}$ .
- The altitude of the site of installation does not exceed 2000 m.
- The relative humidity of the air of the site of installation does not exceed 50% at a maximum temperature of  $+40^{\circ}\text{C}$ . Higher relative humidity may be permitted at lower temperatures, e.g. 90% at  $+20^{\circ}\text{C}$ . Adequate measures shall be taken for the condensation occurred occasionally due to variations in temperature.
- The pollution degree is 2.
- The overvoltage category is III or II.
- Usually be installed in vertical position with a tolerance of  $2^{\circ}$  in any direction
- There is no obvious shock and vibration at the site of installation.

## 4. Main technical data

KWBNL-32 Series RCBOs are composed of residual current transformer, electronic circuit board, residual current release, operating mechanism and plastic enclosure and so on.

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## 5. Main technical data

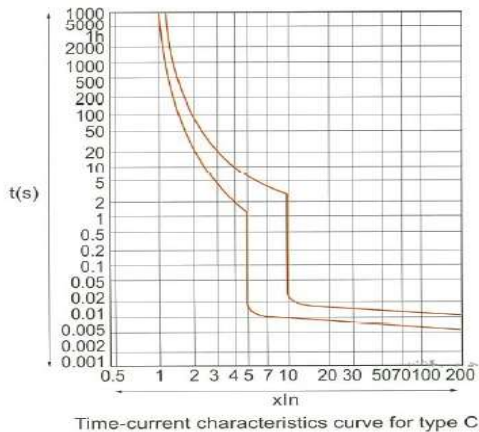
### a. Main technical data

Type	Rated Current of frame size (A)	Number Of poles	Rated Voltage (v)	Rated Breaking Capacity Ics (A)	Rated Current In (A)	Rated residual operating current (mA)	Rated residual non-operating current (mA)	Rated residual making and breaking capacity IΔm(A)	Type of instantaneous tripping
KWBNL-32	20	1P+N	240	3000	6 10 16 20	30 100	15 50	500	C

### b. Characteristics of overcurrent protection

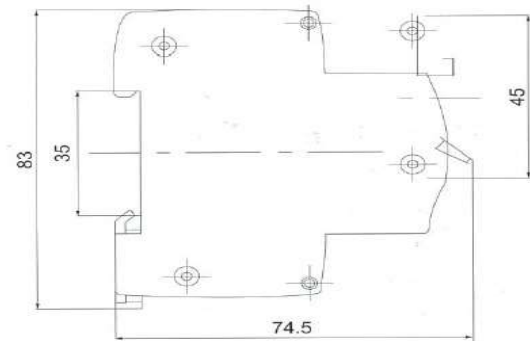
Type of overcurrent instantaneous tripping	Rated Current In (A)	Test current (A)	Limits of tripping or non-tripping time (t)	Results to be obtained	Initial Condition	Ambient Temperature	Remarks
C	6 10 16 20	1.13In	$t \geq 1h$	No tripping	Cold state	30°C~35°C	Immediately following the above test
		1.45In	$t < 1h$	Tripping	Thermal steady-state		
		2.55In	$1s < t < 60s$	Tripping	Cold state		
		5In	$t \geq 0.1s$	No tripping	Cold state		
		10In	$t < 0.1s$	Tripping	Cold state		
							Current established by closing an auxiliary switch

## 6. Time-current characteristic curve of circuit breakers



## 7. Outline and installation dimensions

KWBNL-32 are mounted on mounting rails. Connectable cross-sections of conductor for terminals is up to 10 mm<sup>2</sup>.



Outline and installation dimensions

## 8. Ordering information

- Type designation and specification of RCBOs
- Number of poles and rated current of RCBOs
- Rated residual operating current
- Quantity

For Example

If you want to order 1000 sets of KWBNL-32 RCBOs of rated current of 20 A, rated operating current of 30 mA and type C, please write as "order KWBNL-32/C 20/30 mA, 1000 sets"