# B&R X20AP3131

## 01 5 A current transformers and isolation

### 1 Identify the 5 A CT arrangement

Check the current-transformer secondary ratings and the exact X20AP3131 marking. Do not use another AP31xx variant's input wiring by similarity.

### 2 Secure the voltage and CT circuits

Isolate the voltage measurement circuit and use the approved CT shorting procedure before disconnecting secondary wiring. Never leave an energized current-transformer secondary open.

| | |
|---|---|
| Voltage phases | 3 |
| Current inputs | 4 AC inputs |
| CT secondary rating | 5 A |

## 02 Phase assignment and CT polarity

### 1 Map phases and current polarity

Identify each voltage phase, corresponding current input and transformer polarity. Preserve this association so that power direction and phase angle remain meaningful.

### 2 Apply the required insulation

Use wiring and current transformers with the required double or reinforced insulation. Follow the exact 3131 input circuit rather than the grounded-CT arrangement of a 3132 module.

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|---|---|
| Voltage input impedance | 1.68 MΩ |
| Current-input burden | 20 mΩ |

## 03 Transformer ratios and voltage limits

### 1 Configure transformer scaling

Enter the actual current-transformer ratio and any approved voltage-transformation settings. Check the resulting primary engineering values against the installed metering arrangement.

### 2 Check the voltage boundary

Verify phase-to-phase and phase-to-neutral values against 480 V AC and 277 V AC. Treat a saturated displayed value as a reason to investigate the input range.

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|---|---|
| Phase-to-phase voltage | 480 V AC maximum |
| Phase-to-neutral voltage | 277 V AC maximum |
| Nominal frequency | 50/60 Hz |
| Frequency range | 45–65 Hz |

## 04 Power direction, harmonics and waveforms

### 1 Compare power direction

Apply an approved known-load test and compare active-power sign and phase sequence with the physical installation. Reversed current polarity can produce a misleading energy-flow direction.

### 2 Review harmonic and trace data

Use the harmonic analysis and 8 kHz trace for their intended diagnostic purpose. Keep sample timing and FIFO behavior in mind when comparing a recorded disturbance with controller events.

| | |
|---|---|
| Voltage resolution | 10 mV with direct voltage connection |
| Frequency resolution | 0.01 Hz |
| Harmonic analysis | Through 31st harmonic |
| Trace sampling | 8 kHz for 3 voltage and 4 current channels |

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## 05 Energy accumulation and metering record

### 1 Check energy accumulation

Compare accumulated energy over a defined interval with a suitable reference under stable load. Confirm transformer scaling before interpreting a discrepancy as module error.

### 2 Retain the metering configuration

Save CT ratios, polarity, phase map, voltage arrangement, module revision and verification results. Keep the exact variant's insulation and wiring requirements with the service record.

Technical basis: B&R X20(c)AP31xx Data Sheet, V2.70.

## Related product navigation

B&R X20HB8884

B&R X67SM2436

These are related references, not confirmed substitutes or an automatically approved assembly.